APPENDICES

In the Matter of USGen New England, Inc. Salem Harbor Station	ADMINISTRATIVE CONSENT ORDER Order # ACO-NE-03-7001 Docket Nos. 2002-114 and 2003-017 File No. W025160

I. The Parties

A. The Department of Environmental Protection (the "Department") is a duly constituted agency of the Commonwealth of Massachusetts pursuant to M.G.L. c.21A, section 7, with a principal office at One Winter Street, Boston, Massachusetts 02108. The Department implements 310 CMR 7.29 (the "7.29 Regulations") Emissions Standards for Power Plants, a regulation to which Salem Harbor Station is subject.

B. USGen New England, Inc. ("USGenNE") owns and operates the electric power generating station located in Salem, Massachusetts, known as Salem Harbor Station ("Salem Harbor" or the "Facility").

C. Approximately 55 citizens intervened in the captioned dockets. Those citizens include the Conservation Law Foundation ("CLF"), Clean Water Action, HealthLink, Inc., the Massachusetts Public Interest Research Group ("MASSPIRG"), and the Wenham Lake Watershed Association, and members of those organizations; said citizens group is represented in the above-referenced dockets by CLF.

D. The City of Salem (the "City") is a public instrumentality and municipality. The City is the host community of Salem Harbor and an intervenor in Docket No. 2003-017.

II. Statement of Law and Facts

A. The Department adopted 310 CMR 7.29 in May 2001, which requires Salem Harbor to submit an Emission Control Plan ("ECP") application by January 1, 2002.

B. USGenNE submitted such ECP application in December 2001.

C. The Department issued a proposed ECP Approval of USGenNE's application, but disagreed that the ECP demonstrated that Salem Harbor Station was eligible to meet the 310 CMR 7.29 emissions standards by October 2006. The Department's Proposed ECP Approval contained an October 1, 2004 compliance date.

D. USGenNE submitted a letter to the Department seeking to amend its ECP application for Salem Harbor during the public comment period on the Department's proposed ECP Approval.

E. The Department declined to amend the ECP application during the public comment process, and issued a final ECP Approval on June 7, 2002, with an October 1, 2004 compliance date.

F. USGenNE appealed to the Office of Administrative Appeals the final ECP Approval and the Department's refusal to amend its application. This is the basis for Docket No. 2002-114. The parties referenced in Section I.C. above were granted status as intervenors in that matter.

G. In late June 2002 USGenNE submitted an application to amend its ECP Approval ("Amended ECP"), pursuant to 310 CMR 7.29(6)(h).

H. On December 13, 2002, the Department issued a draft Approval of the Amended ECP, with an October 1, 2006 compliance date.

I. In February 2003, the Department denied USGenNE's application to amend its final ECP Approval for Salem Harbor.

J. USGenNE subsequently appealed that decision to the Office of Administrative Appeals. This is the basis for Docket No. 2003-017. The parties referenced in Section I.C. and the City were granted status as intervenors in that matter.

K. The length of time Salem Harbor must continue to operate to ensure reliable electric service on the North Shore and in the Greater Boston area is uncertain.

L. USGenNE filed under the procedures set forth in Section 18.4 of the Restated NEPOOL Agreement on April 25, 2003, a request with the Independent System Operator of New England ("ISO") to cease operating the facility on or before October 1, 2004.

M. The ISO has not issued a Determination whether Salem Harbor must continue to operate and, if so, for what duration and at what capacity.

N. Such Determination is expected to be issued on or about July 25, 2003.

O. USGenNE has represented to the Parties that it does not have the ability to finance the capital improvements it has proposed to achieve compliance with the 7.29 Regulations, and that, as a result, such funding must be provided by public sources unaffiliated with USGenNE.

P. On May 14, 2003, the Massachusetts Department of Telecommunications and Energy issued an Order Opening Inquiry (the "DTE Order") "to assess the reliability of the energy supply in the North Shore area over the next two to six years in consideration of USGenNE's 18.4 Application and to inform and position the Department to protect ratepayer interests as this matter develops . . ." DTE Order at 3.

Q. In light of the foregoing, it is in the public interest to implement the 7.29 Regulations at Salem Harbor in a manner that achieves significant air emission reductions as expeditiously as possible, but that takes into account the need for reliable electricity supplies, the financial uncertainties surrounding USGenNE, the fiscal uncertainties of the City, and the economic risks to the workers at the facility.

R. It is also in the public interest that necessary permits and regulatory approvals be processed as expeditiously as possible, consistent with the opportunities for public participation provided in the applicable statutes and regulations.

S. The parties to this ACO, therefore, are seeking to provide a compliance framework and schedule to facilitate future decision-making regarding the continued operation of the Salem Harbor facility.

III. Definitions

A. ACO Permit: A permit or other governmental authorization required to implement this ACO.

B. ACO Permitting Authority: Any governmental entity that issues an ACO Permit.

C. Burner Tip Optimization Program: A NO_x reduction program applicable to Salem Harbor Unit 4. The first phase of the program consists of tuning the existing burner tips in order to maximize NO_x reduction. The second phase of the program is to design, have manufactured, install, and test a

new design of burner tip that may further reduce NO_x. The overall program is designed to achieve a NO_x reduction of up to 10% while maintaining boiler reliability.

D. Compliance Account: As set forth in Section IV.B.3.a.

E. Compliance Equipment: The equipment proposed to be installed on one or more Reliability Units by the selected vendor, consistent with Exhibit D of this ACO, to achieve compliance with the NO_x, SO_2 and mercury requirements of the 7.29 Regulations on Units 1, 2, and 3 including but not limited to Selective Catalytic Reactors, Dry Flue Gas Desulfurization Devices, Fabric Filters, and associated corollary equipment and structures; the equipment proposed to be installed on Unit 4, consistent with Exhibit D of this ACO, to achieve compliance, including but not limited to a Selective Non-Catalytic Reduction System; a windscreen for the coal pile; carbon injection equipment; a process to recycle flyash; and activities necessary to allow the installation of such equipment such as tank removals and on-site demolition, excavation, filling, grading and other site preparation activities; and any other mitigation or other requirements imposed on USGenNE in connection with the construction and installation of the Compliance Equipment excluding the near term compliance measures in IV.A. below except to the extent such measures expressly are conditioned in Section IV.A., below, on the availability of Compliance Equipment Funding.

F. Compliance Equipment Funding: Funds made available to pay for the Compliance Equipment.

G. Compliance Equipment Funding Date: The date on which sufficient Compliance Equipment Funding is placed in escrow or otherwise made available such that a binding agreement with a qualified engineering, construction and procurement company or companies may be executed and a notice to proceed under such agreement may be issued.

H. Determination: Notification by the Independent System Operator of New England ("ISO") pursuant to Section 18.4 of the Restated NEPOOL Agreement that a proposed action, such as retirement of a generating unit, will have a significant adverse effect upon the reliability or operating characteristics of the electric system in all or part of New England.

I. Early Reduction Credits of NO_x: Tons of emissions reductions of nitrogen oxides at Salem Harbor which would otherwise be eligible for certification as Emission Reduction Credits pursuant to 310 CMR 7.00: Appendix B(3) (the Massachusetts Emission Reduction Credit Banking and Trading program), but excluding emissions reductions attributable to implementation of the near term compliance measures required in Section IV.A.2 and 3 of this ACO and excluding reductions achieved prior to the Effective Date of this ACO.

J. Early Reduction Credits for SO_2: Tons of SO_2 emitted at Salem Harbor that are (i) below historical actual emissions (as that term is defined in 310 CMR 7.29(2)) and (ii) which are made between May 11, 2001 and October 1, 2005 (for Phase 1) and October 1, 2007 (for Phase 2), all as calculated using the methodology in 310 CMR 7.29(5)(b)2.

K. Effective Date of ACO: The date of the last signature set forth below.

L. Good Utility Practice: As defined in the Restated NEPOOL Agreement, Section 1.31: Good Utility Practice shall mean any of the practices, methods, and acts engaged in or approved by a significant portion of the electric utility industry during the relevant time period, or any of the practices, methods, and acts which, in the exercise of reasonable judgement [sic] in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety and expedition. Good Utility Practice is not limited to a single, optimum practice method or act to the exclusion of others, but rather is intended to include acceptable practices, methods, or acts generally accepted in the region.

M. Non-Reliability Unit: Any unit at Salem Harbor that has received an approval to cease operations under the procedures of Section 18.4 of the Restated NEPOOL Agreement.

N. NO_x Allowance: (i) An Allowance, as that term is defined in 310 CMR 7.28(2) and used in 310 CMR 7.28 or (ii) any other authorization by the United States Environmental Protection Agency or Massachusetts Department of Environmental Protection initially allocated to Salem Harbor to emit up to one ton of nitrogen oxides, including but not necessarily limited to NO_x Allowances, as that term is defined in 40 CFR 96.2 and 40 CFR 97.2.

O. Offsets of SO_2 or NO_x: Tons of SO_2 or NO_x that exceed the number of tons of emissions reductions at Salem Harbor required by the applicable emissions standards of Phase 1 and Phase 2 respectively, of 310 CMR 7.29, after the applicable compliance dates of those standards as contained in this ACO.

P. Phase 1: The emissions reductions required by 310 CMR 7.29(5)(a)1.a. (for NO_x) and 310 CMR 7.29(5)(a)2.a. (for SO_2).

Q. Phase 2: The emissions reductions required by 310 CMR 7.29(5)(a)1.b. (for NO_x) and 310 CMR 7.29(5)(a)2.b. (for SO_2).

R. Reliability Unit: Any unit at Salem Harbor that is not a Non-Reliability Unit.

S. SO_2 Allowance: An authorization by the Administrator of the United States Environmental Protection Agency (or his or her designee) under the federal Acid Rain Program (as that term is defined in 40 CFR 72.2) to emit up to one ton of sulfur dioxide during or after a specified calendar year, or any comparable authorization to emit up to one ton of sulfur dioxide under any other program adopted or implemented by the Commonwealth of Massachusetts or any other state.

IV. Disposition and Order

In the interest of protecting the environment and avoiding the time and expense of protracted litigation, the signatories to this ACO hereby agree that the above-cited administrative appeals will be resolved with the following provisions, and that the terms and conditions of this ACO shall be binding upon the Parties' respective successors and assigns. The Parties understand and hereby waive whatever rights they have to further administrative review before the Department, as well as an appeal to Court, provided this ACO is accepted as a settlement of the above-cited administrative appeals.

A. Near Term Compliance Measures: For all Units at Salem Harbor, USGenNE shall undertake the following near term compliance measures.

1. Immediate SO_2 Reductions from Unit 4.

   Beginning after consumption of existing fuel oil inventories currently stored at Salem Harbor, Unit 4 shall combust No. 6 oil with an average sulfur content of not greater than 0.3% through December 31, 2003. As of January 1, 2004, USGenNE shall cause Unit 4 to achieve early compliance with the SO_2 emission requirements of the 7.29 regulations by emitting not more that 6 lbs/MWH on a rolling twelve-month average basis.

2. Immediate NO_x Reductions from Units 1, 2 and 3.

   USGenNE shall reduce NO_x emissions from Units 1, 2 and 3 by operating its existing SNCR equipment, consistent with other applicable regulations, on a year round basis in the same manner as it is currently operated during the ozone season until such time Salem Harbor achieves full compliance with the 7.29 Regulations.

3. Immediate NO_x Reductions from Unit 4.

USGenNE will immediately commence a Burner Tip Optimization Program to reduce NO_x emissions from Unit 4. The Program shall be completed by October 31, 2003.

4. Acceleration of Permitting of SNCR for Unit 4.

Within 30 days of the Effective Date of this ACO, USGenNE shall submit a Plan Approval application pursuant to 310 CMR 7.02 for the installation of SNCR equipment on Unit 4. Detailed engineering, procurement and installation of the SNCR equipment shall be commenced provided that with respect to the SNCR equipment on Unit 4 the Compliance Equipment Funding Date has occurred. Exhibit A of this ACO includes an illustrative milestone schedule for permitting and installing the SNCR equipment.

5. Immediate Improvements in Dust Mitigation Associated with Facility's Coal Pile

Within 30 days after the execution of this agreement USGenNE will file with the Department, with a copy to all Parties to this ACO, a schedule for implementing the measures requested by the Dust Committee deemed feasible by USGenNE. Notwithstanding the foregoing consultation process and timeframes, USGenNE shall implement not later than July 31, 2003 improvements in coal off-loading procedures, coal pile management procedures, water spray operation and maintenance procedures which shall be incorporated into the final list of measures filed with the Department. Such measures shall be developed in consultation with the joint USGenNE/neighborhood group in Salem known as the "Dust Committee." Such filing will be in the form of amendments to the existing SOMP for Salem Harbor. Within 30 days of receipt of the proposed amendments, DEP shall issue an approval, conditional approval or disapproval of the proposed amendments. USGenNE shall implement the approved amendments consistent with the schedule approved by the Department.

6. Anticipatory Activities Associated with Installation of Coal Pile Windscreen

USGenNE shall issue a Request for Proposals for the preliminary design and installation of a coal pile windscreen within 90 days after execution of this Agreement. The terms of that RFP should reflect close consultation with, and concerns expressed by, the Dust Committee. The purchase and installation of the windscreen is contingent on receipt of Compliance Equipment Funding. Upon selection of a preferred bidder, USGenNE shall present the bidder's preliminary design at the following Dust Committee meeting. Unless requested otherwise in writing by DEP or the City within 30 days of that presentation, USGenNE shall submit a notice of intent with respect to the preliminary design of the proposed windscreen for approval by the Salem Conservation Commission and shall file an application for a license under G.L. c. 91 based on that preliminary design. All other permit submissions, detailed engineering, procurement and installation of the windscreen will be completed as soon as possible after the Compliance Equipment Funding Date.

B. Long Term Compliance Measures: For each Reliability Unit at Salem Harbor, USGenNE shall undertake the following long-term compliance measures so long as the Compliance Equipment Funding Date is achieved on or before December 1, 2003:

1. Achieve compliance under this ACO with the Phase I NO_x and SO_2 provisions of the 7.29 Regulations on or before July 31, 2006.

2. Initiate critical path permitting for the Compliance Equipment, except with respect to the coal pile windscreen provided for in IV.A(6) *supra*, as follows:

i. by September 1, 2003, submit an application to the Salem Planning Board for Site Plan review and approval;

ii. by September 1, 2003, submit a petition for exemption from local zoning requirements pursuant to G.L.c. 40A, § 3; and

iii. by September 1, 2003, submit an application for a license under G.L. c. 91.

3. Provide SO_2 and NO_x allowance retirements, early reduction credits and/or offsets to bring Salem Harbor into compliance with the SO_2 and NO_x requirements of 310 CMR 7.29 for the period beginning October 1, 2005 until the Facility achieves compliance with the SO_2 and NO_x requirements of 310 CMR 7.29 as follows:

- SO_2 at the ratio of 1:1; and
- NO_x at the ratio of 1:1.

a. For the purpose of tracking the requirements of Section IV.B.3, establish an accounting mechanism (hereinafter "Compliance Account"). Beginning October 1, 2005, each pound of NO_x and SO_2 emitted from the Facility in excess of the applicable emissions rates under 310 CMR 7.29 shall be added to the Compliance Account until the date on which the Facility achieves compliance with such emission rates. The applicable emission rate for SO_2 as of October 1, 2005 is the rate set forth in 310 CMR 7.29(5)(a)(2)(a). The applicable emission rate for SO_2 as of October 1, 2007 is the rate set forth in 310 CMR 7.29(5)(a)(2)(b). The applicable emission rate for NO_x as of October 1, 2005 is the rate set forth in 310 CMR 7.29(5)(a)(1)(a). The applicable emission rate for NO_x as of October 1, 2007 is the rate set forth in 310 CMR 7.29(5)(a)(1)(b). Each allowance retirement, early reduction credit, and/or offset provided by USGenNE pursuant to Sections IV.B.3 and IV.D.(ii) shall be credited against the Compliance Account balance. USGenNE shall report the then-current balance of the Compliance Account in the quarterly reports provided pursuant to Section IV.F. below. To the extent that USGenNE uses NOx allowance retirements as a credit against the Compliance Account balance, it shall generate such surplus allowances solely from operations at the Facility using Good Utility Practice.

b. In the event that USGenNE is able to comply with the requirements of 310 CMR 7.29(5)(a)2.b.i. prior to October 1, 2007, then USGenNE may credit its Compliance Account deficits with one ton of SO_2 for each ton of SO_2 which USGenNE emits below the emission limits at 310 CMR 7.29(5)(a)2.b.i., provided however that no such credit shall be allowed if the SO_2 emissions reduction creates an Early Reduction Credit for SO_2, and that Early Reduction Credit has been applied to the Compliance Account.

4. Comply with the second phase of SO_2 emission limitations by October 1, 2007.

5. Implement the permitting milestone schedule included as Exhibit B and the construction milestone schedule included as Exhibit C.

C. Reliability Unit Funding Delay: If a Reliability Unit achieves a Compliance Equipment Funding Date after December 1, 2003, the deadlines set forth in Sections B.1, B.4. and B.5 shall be extended by a period of time equal to the period of time between December 1, 2003 and the date on which the Compliance Equipment Funding Date for such Unit is achieved. In all other

respects, the provisions of Section B shall apply. If a Reliability Unit does not achieve a Compliance Equipment Funding Date by July 31, 2005, the parties shall negotiate in good faith with respect to the future status of that Unit.

D. Non-Reliability Unit Obligations: At such time as a Reliability Unit becomes a Non-Reliability Unit, and provided that USGenNE continues performing the near term compliance measures set forth in Sections A.1, A.2, A.3 and A.5, USGenNE may continue to operate such Non-Reliability Unit for the longer of (i) the period from the date on which the ISO determines the Reliability Unit is a Non-Reliability Unit and October 1, 2005 or (ii) twelve months following the date on which the ISO determines the Reliability Unit is a Non-Reliability Unit provided, however, that if the Non-Reliability Unit achieves compliance with the requirements of the 7.29 Regulations prior to ceasing operations under this Section IV.D, it may continue to operate in compliance with the 7.29 Regulations. In the event that USGenNE continues to operate a Non-Reliability Unit pursuant to clause (ii) of this section or continues to operate a Non-Reliability Unit due to an event of Force Majeure, the provisions of Section IV.B.3 shall apply in addition to those of Sections A.1, A.2, A.3 and A.5.

E. Partial Station Operations: The parties acknowledge that the ISO may determine that only some Units at Salem Harbor are Reliability Units. If the ISO issues such a Determination, the provisions of Section IV.B. shall apply to such Reliability Units, provided that there is sufficient Compliance Equipment Funding available to meet its requirements. In the event there is not adequate Compliance Equipment Funding for such Reliability Unit, the provisions of IV.C. shall apply. If in the judgment of USGenNE the number or combination of units remaining Reliability Units renders infeasible the implementation of the pollution control strategy in Exhibit D, USGenNE may petition to amend its approved ECP, as modified by this ACO, to bring the remaining Reliability Units into compliance with the 7.29 Regulations. Approval of such an amendment shall be considered an ACO Permit.

F. Reporting Requirements:

1. Pursuant to the reporting requirements set forth in the Emission Control Plan Approval dated June 7, 2002, USGenNE shall submit quarterly reports to DEP including, but not limited to the following:

   a. status of permitting and construction of the Compliance Equipment;

   b. status of 18.4 Determination process for any Unit at Salem Harbor including any associated regulatory proceedings and/or litigation; and

   c. status of discussions, regulatory proceedings and/or litigation pertaining to Compliance Equipment Funding.

2. USGenNE will provide a copy of such quarterly reports to the Parties to this ACO.

3. In the first quarterly report submitted under this Section IV.F after a Final Project Schedule has been agreed upon with the vendor selected to construct the Compliance Equipment for Units 1, 2 and 3, USGenNE will provide a copy of such construction schedule.

V. Other Rights and Obligations of Parties

A. USGenNE shall have no obligation to implement the NO_x or SO_2 provisions of the Approved ECP beyond those obligations described in this ACO including Exhibit D. To the extent that the terms of the Approved ECP are inconsistent with those of this ACO, this ACO shall govern.

B. USGenNE shall endeavor to enter into an agreement with the South Essex Sewerage District for the purchase of gray water necessary to implement this ACO on commercially reasonable terms and conditions.

C. The incorporated entities that are signatories hereto acknowledge that their participation in any proceeding contemplated in this ACO shall be undertaken in the spirit of the terms and conditions hereof except as to the City with respect to Section IV.A(6). An indication of support for an alternate resource to provide reliable electric service to the North Shore and Greater Boston area of Massachusetts shall not be deemed a breach of this provision.

D. In the event of a permanent cessation of operations at Salem Harbor, USGenNE shall abide by all applicable federal and state statutes and regulations pertaining to the cessation of such operations.

E. The definitions of "Early Reduction Credits for NO_x," "Early Reduction Credits of SO_2," "NO_x Allowance", "SO_2 Allowance," allowances, credits, or offsets herein are not intended to preclude USGenNE from complying with Section IV.B.3. of this ACO with similar allowance, credit, or offset programs that may come into place in the future, providing that any such program shall only be eligible for compliance purposes if it is adopted or otherwise accepted by the Commonwealth of Massachusetts.

F. The Parties acknowledge that the cost of complying with the mercury, CO_2, Particulates and CO provisions of 310 CMR 7.29 are not known. USGenNE is not prohibited by this ACO from seeking relief from such requirements as may be necessary to honor its commitment under this ACO.

G. The date for compliance with the CO_2 requirements found at 310 CMR 7.29(5)(a)5.a. shall be October 1, 2006. The compliance date for the CO_2 requirements found at 310 CMR 7.29(5)(a)5.b. shall be October 1, 2008.

H. Nothing in this ACO shall prohibit USGenNE from seeking to amend the Approved ECP, as modified by the ACO, to achieve compliance with the 7.29 Regulations by alternate emission control strategies or fuels provided that they would achieve the same or higher level of emission reductions for the local community as do the terms of this ACO.

I. Where a notice, report, schedule or similar filing is required to be filed with a Party to this ACO, that Party shall provide a copy of same to all of the other entities listed in Section XIV below.

VI. Obligation of Successor Owner

Any successor owner of Salem Harbor shall be bound by the terms of this Order.

VII. Force Majeure

If a failure by USGenNE to comply with any provision of this ACO is caused by an event of Force Majeure, USGenNE shall be excused for such failure to comply for the period of time the noncompliance continued due to such event, not to exceed the amount of time lost due to the actual, unavoidable delay resulting from such event. USGenNE shall promptly, but in no event later than ten (10) days of learning of such event, notify the Department in writing, with a copy to all other entities listed in Section XIV below. The written notice shall state the nature of the event; the anticipated length and cause of the delay; the measures taken or to be taken to avoid or minimize the delay; and a timetable for taking those measures. Force Majeure is defined as any circumstance beyond the control of USGenNE, which could not have been foreseen and prevented by due diligence. Examples of an event of Force Majeure include, but are not limited to the following: delays in shipments of necessary equipment by suppliers; acts of war; acts of terrorism; acts of God; unanticipated delays due to accidents, strikes, freight embargoes, or other work stoppages; severe flood, fire, extreme weather conditions or other natural disasters; or the failure of any

ACO Permitting Authority to have issued a final non-appealable ACO Permit by the dates required for USGenNE to perform the activities necessary to implement the ACO in accordance with the schedules set forth herein. In the event of an ACO Permitting Authority Force Majeure, the presumption shall be that USGenNE is entitled to a day-for-day extension of its obligations hereunder but it shall, within the budgets established in connection with the Compliance Equipment Funding, nevertheless use commercially reasonable efforts to avoid or minimize the impacts of the ACO Permitting Force Majeure. An Event of Force Majeure does not excuse USGenNE from complying with the requirements of Section IV.B.3.

VIII. Stipulated Penalties

In the event that the Department believes that a violation of the terms of this ACO has occurred, it shall provide USGenNE with a written notice describing the alleged violation. If USGenNE fails to cure the violation within 10 days of receipt of such notice, USGenNE agrees to pay to the Department a stipulated penalty as follows:

Period of Violation	Penalty per Day
11th through 30th day	$3,000.00 per day
31st day onward	$5,000.00 per day

All stipulated penalties accruing under this ACO shall be paid within thirty (30) calendar days of the date that USGenNE receives a written claim thereof from the Department describing the violation, except if USGenNE challenges the basis of the Department's claim for stipulated penalties, in which case they shall be payable within thirty (30) calendar days of the date such challenge is resolved.

In the event that a violation is not corrected by the 31st day after notice is provided, the stipulated penalties set forth herein shall not preclude the Department from electing to pursue alternative remedies or penalties which may be available by reason of USGenNE's failure to comply with the requirements of this ACO. In the event the Department elects to pursue alternative remedies or statutory penalties, USGenNE shall not be required to pay stipulated penalties pursuant to this ACO. If after the 30th day of a violation the Department pursues such other remedy or statutory penalty, USGenNE will not be liable for stipulated penalties that would otherwise have accrued beyond the 30th day of any such violation. However, any stipulated penalties accrued prior to the 31st day must still be paid to the Department.

IX. Dispute Resolution

In the event the Parties cannot resolve any dispute with respect to the meaning or implementation of this ACO except with respect to Section IV.C., then the interpretation advanced by the Department shall be considered binding unless a Party invokes the dispute resolution provisions of this Section.

Except with respect to Section IV.C., if in the opinion of a Party there is a dispute with respect to the meaning or implementation of this ACO, that Party shall within thirty (30) days of identifying the matter in dispute send a written notice to the other Party, with a copy to all other entities listed in Section XIV below, which outlines the nature of the dispute. Any such dispute shall in the first instance be the subject of informal negotiations between the parties. That period of informal negotiations shall not extend beyond thirty (30) days from the date when the notice was sent unless the parties agree otherwise.

If informal negotiations are unsuccessful and the dispute concerns a matter within the jurisdiction of the Department, then the Department's position shall control unless a Party to this ACO files with the Office of Administrative Appeals a petition for an adjudicatory hearing, describing the nature of the dispute and proposing a resolution. Such petition must be filed within fifteen days after termination of informal negotiations.

If informal negotiations are unsuccessful, and the dispute concerns a matter that is not within the jurisdiction of the Department to decide, then the Party pursuing the dispute shall either initiate formal

mediation with all Parties, or file an action in the applicable venue.

X. Effect of ACO

A. Compliance with this Order shall satisfy USGenNE's obligations under the 7.29 Regulations with respect to 310 CMR 7.29(5)(a)(1), (2) and (5), including relevant provisions of the Emission Control Plan Approval issued to USGenNE with respect to Salem Harbor on June 7, 2002. The terms of this ACO modify the terms of that Approved ECP and no amendment to said Approved ECP shall be required to implement the terms of this ACO including Exhibit D. In addition, no approval under 310 CMR 7.02 shall be required to implement this ACO with respect to Units 1, 2, and 3. Compliance with this Order shall also be deemed to satisfy USGenNE's obligations under the notice of noncompliance issued to USGenNE with respect to Salem Harbor on March 3, 2003.

B. Except as provided in Section IV, this ACO shall not relieve USGenNE from its obligations to comply with any Federal or state law, regulation or permit. Nothing in this ACO shall preclude USGenNE from applying to regulatory agencies for licenses, approvals, permits, amendments or modifications to licenses, approvals, or permits.

C. This ACO shall not constitute evidence in any proceeding, except in a proceeding to enforce the provisions of this ACO or in any proceeding regarding the meaning of a provision of the ACO.

D. This ACO shall apply to USGenNE, its officers, employees, agents, contractors, and consultants. USGenNE shall not violate this ACO and shall not allow or suffer its officers, employees, agents, contractors, or consultants to violate this ACO. A violation of this ACO by any of the foregoing shall constitute a violation by USGenNE.

XI. Termination

A. This ACO shall terminate with respect to each Reliability Unit at Salem Harbor on the later date on which either of the following occur:

1. Submittal by USGenNE of a report on January 30, 2009 pursuant to 310 CMR 7.29(7) demonstrating compliance of such unit with the emission limits for CO_2 set forth at 310 CMR 7.29(5)(a)5.b., or

2. Filing of a quarterly report pursuant to Section IV.F. documenting a zero balance for both NO_x and SO_2 in the Compliance Account for that unit.

B. This ACO shall terminate with respect to each Non-Reliability Unit on permanent cessation of operations of each such unit.

XII. Nonwaiver Provision

Failure of the Department to complain of any action or inaction on the part of USGenNE shall not constitute a waiver by the Department of any of its rights hereunder. Furthermore, no waiver by the Department of any provision of this Consent Order shall be construed as a waiver of any other provision of this Order. Failure of USGenNE to complain of any action or inaction on the part of the Department shall not constitute a waiver by USGenNE of any of its rights hereunder. Furthermore, no waiver by USGenNE of any provision of this Consent Order shall be construed as a waiver of any other provision of this Order.

XIII. Severability

If any term or provision of this ACO, or its application thereof to any person or circumstance shall to any extent be invalid or unenforceable, the remainder of this ACO shall not be affected thereby, and each remaining term and provision shall be valid and enforceable to the fullest extent permitted by law.

XIV. Notices

If to USGen New England, Inc.:

USGen New England, Inc.
7600 Wisconsin Avenue
Bethesda, MD 20814-6161
Attention: General Counsel
Telephone: 301-280-6800
Fax: 301-280-6913
Email: sanford.hartman@neg.pge.com

Salem Harbor Station
24 Fort Avenue
Salem, MA 01970-5693
Attention: General Manager
Telephone: 978-740-8234
Fax: 978-740-8215
Email: michael.fitzgerald@neg.pge.com

Foley Hoag LLP
155 Seaport Boulevard
Boston, MA 02210-2600
Attention: Mary Beth Gentleman, Esquire
Telephone: 617-832-1199
Fax: 617-832-7000
Email: mgentleman@foleyhoag.com

If to the Department of Environmental Protection:

MA Department of Environmental Protection
Office of the General Counsel
One Winter Street
Boston, MA 02108
Attention: Edward J. Braczyk
Telephone: 617-292-5500
Fax: 617-338-5511
Email: edward.braczyk@state.ma.us

If to the City of Salem:

City of Salem
City Solicitor
93 Washington Street
Salem, MA 01970
Telephone: 978-745-9595
Fax: 978-740-0072
Email: jwalsh@salem.com

If to Conservation Law Foundation, on behalf of 55 member intervenor citizens group:

Conservation Law Foundation
62 Summer Street
Boston, MA 02110
Attention: Seth Kaplan
Telephone: 617-350-0990
Fax: 617-350-4030
Email: skaplan@clf.org

If to HealthLink:

HealthLink
c/o Bright
3 Bridge Street
Marblehead, MA 01945
Telephone: 781-631-8104
Email: HealthLink@comcast.com

If to Wenham Lake Watershed Association:

Wenham Lake Watershed Association
c/o Ehrlich
46 Gerald Road
Marblehead, MA 01945
Telephone: 781-639-0299
Fax: 781-639-0299
Email: lale@comcast.com

If to Clean Water Action:

Clean Water Action
36 Bromfield St., Suite 204
Boston, MA 02108
Attention: Cindy Luppi
Telephone: 617-338-8131
Fax: 617-338-6449
Email: cluppi@cleanwater.org

If to MASSPIRG:

MASSPIRG
29 Temple Place
Boston, MA 02111
Attention: Frank Gorke
Telephone: 617-292-4800
Fax: 617-292-8057
Email: frank@masspirg.org

XV. Entire Agreement

This constitutes the entire understanding and agreement between the Parties to this ACO with respect to the subject matter of this ACO.

Each of the undersigned represents that she/he has the authority to sign this ACO and to legally bind himself and/or the party on whose behalf such representative is signing. This ACO shall take effect on the date of the last signature set forth below.

USGEN NEW ENGLAND, INC.

By:_____

Typed Name:_____

Title:_____

Date:__June 19, 2003_____

DEPARTMENT OF ENVIRONMENTAL PROTECTION

By:_____

Typed Name:_____

Title:_____

Date:__June 19, 2003_____

CITY OF SALEM

By:_____

Typed Name:_____

Title:_____

Date:__June 19, 2003_____

By their attorneys

CONSERVATION LAW FOUNDATION, on behalf of 55 member intervenor citizens group

By:_____

Typed Name:_____

Title:_____

Date:___June 19, 2003_____

Each of the undersigned represents that she/he has the authority to sign this ACO and to legally bind himself and/or the party on whose behalf such representative is signing. This ACO shall take effect on the date of the last signature set forth below.

USGEN NEW ENGLAND, INC.

By:_____

Typed Name:_____

Title:_____

Date:__June 19, 2003_____

DEPARTMENT OF ENVIRONMENTAL PROTECTION

By:_____

Typed Name:_____

Title:_____

Date:__June 19, 2003_____

CITY OF SALEM

By:_____

Typed Name:_____

Title:_____

Date:__June 19, 2003_____

By their attorneys

CONSERVATION LAW FOUNDATION, on behalf of 55 member intervenor citizens group

By:_____

Typed Name:_____Seth Kaplan_____

Title:_____Senior Attorney / Project Director_____

Date: __June 19, 2003_____

Each of the undersigned represents that she/he has the authority to sign this ACO and to legally bind himself and/or the party on whose behalf such representative is signing. This ACO shall take effect on the date of the last signature set forth below.

USGEN NEW ENGLAND, INC.

By:_____

Typed Name:_____

Title:_____

Date: June 19, 2003

DEPARTMENT OF ENVIRONMENTAL PROTECTION

By: Edward P. Kurtz

Typed Name:_____

Title:_____

Date: June 19, 2003

CITY OF SALEM

By: Stanley J. Usovicz Jr.

Typed Name: STANLEY J. USOVICZ, JR.

Title: MAYOR

Date: June 19, 2003

By their attorneys

CONSERVATION LAW FOUNDATION, on behalf of 55 member intervenor citizens group

By:_____

Typed Name:_____

Title:_____

Date: June 19, 2003

Each of the undersigned represents that she/he has the authority to sign this ACO and to legally bind himself and/or the party on whose behalf such representative is signing. This ACO shall take effect on the date of the last signature set forth below.

USGEN NEW ENGLAND, INC.

By: P. Chrisman Iribe

Typed Name: P. Chrisman Iribe

Title: President

Date: June 19, 2003

DEPARTMENT OF ENVIRONMENTAL PROTECTION

By: _____

Typed Name: _____

Title: _____

Date: June 19, 2003

CITY OF SALEM

By: _____

Typed Name: _____

Title: _____

Date: June 19, 2003

By their attorneys

CONSERVATION LAW FOUNDATION, on behalf of 55 member intervenor citizens group

By: _____

Typed Name: _____

Title: _____

Date: June 19, 2003

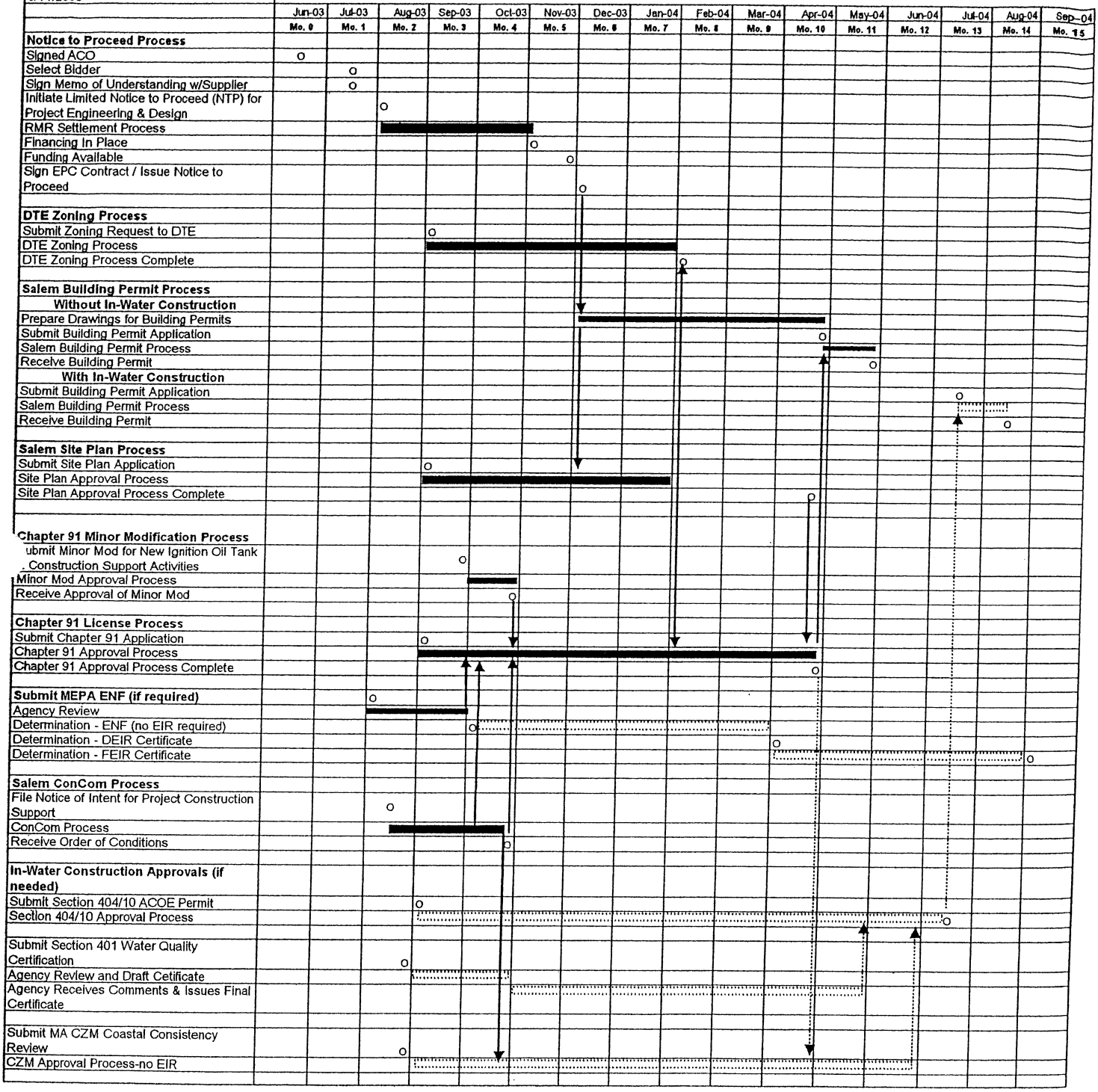
Salem Harbor Unit 4 Short Term NOx
Illustrative Schedule
6/11/2003

Exhibit A

	Jun-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Jan-04	Feb-04	Mar-04	Apr-04	May-04	Jun-04	Jul-04	Aug-04	Sep-04	Oct-04
	Mo. 0	Mo. 1	Mo. 2	Mo. 3	Mo. 4	Mo. 5	Mo. 6	Mo. 7	Mo. 8	Mo. 9	Mo. 10	Mo. 11	Mo. 12	Mo. 13	Mo. 14	Mo. 15	Mo. 16
Submit Revised 7.02 for SH4 SNCR	○																
Boiler Testing w/Current Burner Tips	○	▬	▬														
Design/Fabricate New Burner Tips				▬													
Boiler Testing w/New Burner Tips					▬												
Funding Available						○											
Temperature Mapping for SNCR					▬												
CFD Modeling & SNCR System Design						▬	▬										
Receive Approved 7.02 Application for SH4 SNCR								○									
Release SNCR for Fabrication								○									
SNCR Equipment Fabricated and Delivered								▬	▬	▬	▬						
Installation of In-Boiler SNCR Equipment											▬	▬	▬				
Installation of Non-Boiler SNCR Equipment													▬	▬	▬		
Commissioning															▬	○	
In-Service																	
(assumes no MEPA review required)																	

Salem Harbor Emission Control Project
Illustrative Permit Schedule
6/11/2003

Exhibit B



Salem Harbor Emission Control Project
Illustrative Construction Schedule
6/11/2003

Exhibit C (page 1 of 2)

	May-04	Jun-04	Jul-04	Aug-04	Sep-04	Oct-04	Nov-04	Dec-04	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05
	Mo. 11	Mo. 12	Mo. 13	Mo. 14	Mo. 15	Mo. 16	Mo. 17	Mo. 18	Mo. 19	Mo. 20	Mo. 21	Mo. 22	Mo. 23	Mo. 24
Salem Building Permit Process														
Without In-Water Construction														
Receive Building Permit	○													
With In-Water Construction														
Receive Building Permit				○										
Construction Process (assumes no In-Water Construction)														
Contractor Mobilization	○													
Mobilization Process and Foundation Preparation	▬	▬												
Building Foundations			▬	▬	▬	▬	▬	▬						
Equipment Erection					▬	▬	▬	▬	▬	▬	▬	▬	▬	▬
Complete Mechanical Construction														
Commissioning / Start-Up														
On-Line														

Exhibit C (page 2 of 2)

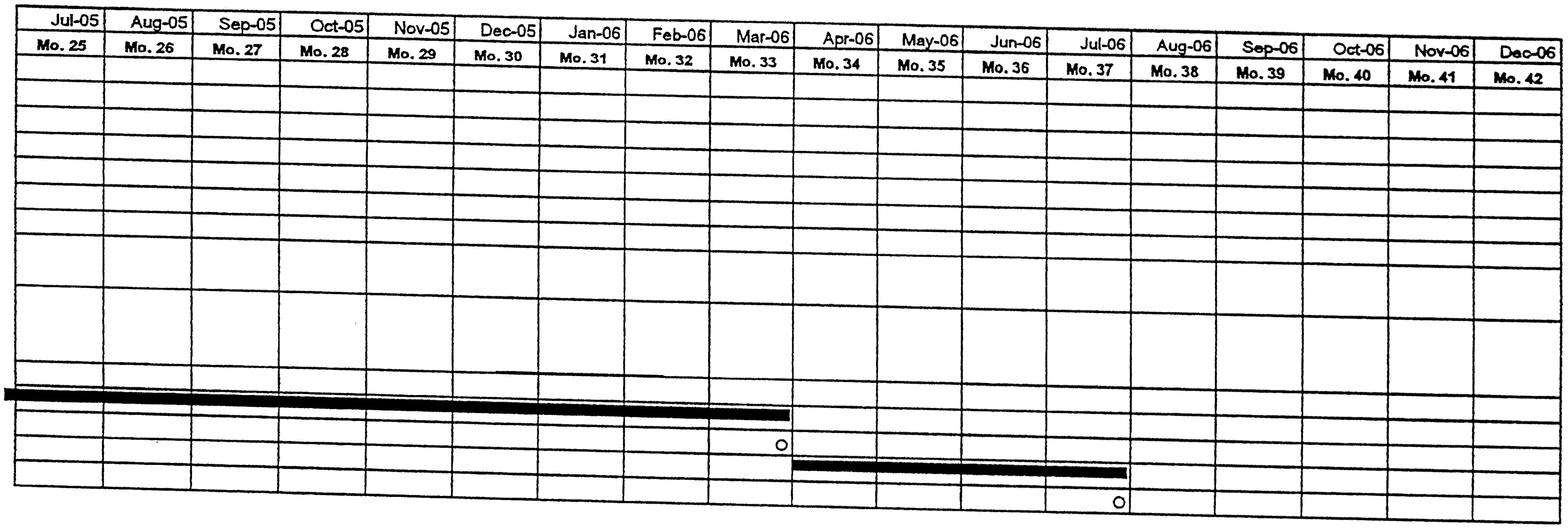


EXHIBIT D

ACO MODIFICATIONS TO
EXHIBIT A OF APPROVED ECP
FOR SALEM HARBOR

This exhibit describes the pollution control strategies/equipment; emission limitations/restrictions; monitoring and testing requirements; record keeping requirements; reporting requirements; and special conditions, the facility shall employ to achieve compliance with 310 CMR 7.29 under the terms of this ACO. Where there is a conflict with 310 CMR 7.29, the terms of the ACO control.

1. EQUIPMENT DESCRIPTION

The following emission units (Table 1) are subject to and regulated by the **Administrative Consent Order:**

Table 1*

EU #	DESCRIPTION OF EMISSION UNIT	EU DESIGN CAPACITY (MMBTU/HR)	EU DESIGN CAPACITY MW (NET)	POLLUTION CONTROL MEASURES (PCM)[1]
EU 1	Babcock & Wilcox Model No. RB103 Water Tube Boiler	954	84	Low NO_x Burners
				Selective Catalytic Reduction
				Combustion Tuning and Controls
				Electrostatic Precipitators
				Management of Lower Sulfur Fuels
				Dry Flue Gas Desulfurization with Fabric Filter
EU 2	Babcock & Wilcox Model No. RB103 Water Tube Boiler	966	81	Low NO_x Burners
				Selective Catalytic Reduction
				Combustion Tuning and Controls
				Electrostatic Precipitators
				Management of Lower Sulfur Fuels
				Dry Flue Gas Desulfurization with Fabric Filter
EU 3	Babcock & Wilcox Model No. RB284 Water Tube Boiler	1,696	150	Low NO_x Burners with Overfire Air
				Selective Catalytic Reduction
				Combustion Tuning and Controls
				Electrostatic Precipitators
				Management of Lower Sulfur Fuels
				Dry Flue Gas Desulfurization with Fabric Filter
EU 4	Riley Stoker Model No. 1SR Water Tube Boiler	4,800	440	Low NO_x Burners
				Combustion Tuning and Controls
				Electrostatic Precipitators
				Management of Lower Sulfur Fuels
				Selective Non-Catalytic Reduction

Table 1 Notes:

1. Details of the Pollution Control Measures including alternatives under consideration are

described in Sections E, F, and G of the ECP application and Amended ECP application. In addition, the facility is proposing to install ash recycling processing equipment to reduce fly ash waste from Units 1, 2 and 3, and is also proposing to install windscreens around the coal pile to minimize potential fugitive coal emissions from the processing and management of the coal pile.

* Legend to Abbreviated Terms within Table 1:

EU # = Emission Unit Number
MMBTU/HR = fuel heat input in million British Thermal Units per hour
MW (NET) = net electrical output in Megawatts
NO_x = Nitrogen Oxides

2. APPLICABLE REQUIREMENTS

A. EMISSION LIMITS AND RESTRICTIONS

USGen-NE shall comply with the emission limits/restrictions as contained in Table 2 below of this **Administrative Consent Order.**

Table 2 *

EU #	RESTRICTION/ OPERATING PRACTICES	POLLUTANT	EMISSION LIMIT/STANDARD	APPLICABLE REGULATION AND/OR APPROVAL NUMBER[1]
EU 1, EU 2, EU 3, EU 4	NA	NO_x	Shall not exceed 1.5 lbs/MWh calculated over any consecutive 12 month period, recalculated monthly.	310 CMR 7.29(5)(a)1.a.
			Shall not exceed 3.0 lbs/MWh calculated over any individual month.	310 CMR 7.29(5)(a)1.b.
		SO_2	Shall not exceed 6.0 lbs/MWh calculated over any consecutive 12 month period, recalculated monthly.	310 CMR 7.29(5)(a)2.a.
			Shall not exceed 3.0 lbs/MWh calculated over any 12 month period, recalculated monthly.	310 CMR 7.29(5)(a)2.b.i.
			Shall not exceed 6.0 lbs/MWh calculated over any individual month.	310 CMR 7.29(5)(a)2.b.ii.
		Hg	Total annual mercury emissions from combustion of solid fuels in units subject to Part 72 located at an affected facility shall not exceed the average annual emissions calculated using the results of the stack tests required in 310 CMR 7.29(5)(a)3.d.ii..	310 CMR 7.29(5)(a)3.c.
		CO_2	Emissions of carbon dioxide from the affected facility in the calendar year, expressed in tons, from Part 72 units located at the affected facility shall not exceed historical actual emissions of 4,286,053 tons. [2]	310 CMR 7.29(5)(a)5.a.
			Shall not exceed 1800 lbs/MWh in the calendar year.	310 CMR 7.29(5)(a)5.b.

Table 2 Notes:

1. The ACO provides the compliance schedule for adherence to the emission limits/standards provided in Table 2 above.

2. The Department is in the process of developing provisions for the quantification and certification of Greenhouse Gas (GHG) reductions for use in demonstrating compliance with the CO_2 emission limitations contained in 310 CMR 7.29. The Department will review and approve or deny proposals for off-site, sequestration, or non-contemporaneous reductions (i.e. early on-site reductions) of CO2 or other GHG after adoption of amendments to 310 CMR 7.00: Appendix B, and other regulatory sections, if necessary.

* Legend to Abbreviated Terms within Table 2:

EU# = Emission Unit Number
lbs/MWh = pounds per Megawatt-hour of net electrical output
NO_x = Nitrogen Oxides
SO_2 = Sulfur Dioxide
Hg = Mercury
CO = Carbon Monoxide
CO_2 = Carbon Dioxide
PM 2.5 = Fine Particulate Matter
NA = not applicable

B. COMPLIANCE DEMONSTRATION

The facility is subject to the monitoring/testing, record keeping, and reporting requirements as contained in Tables 3, 4 and 5 below and 310 CMR 7.29, as well as the applicable requirements contained in Table 2:

Table 3 *

EU#	MONITORING/TESTING REQUIREMENTS
EU 1, EU 2, EU 3, EU 4	Actual emissions shall be monitored as a facility total for all units included in the calculation demonstrating compliance. Actual emissions shall be monitored in accordance with 40 CFR Part 75 for SO_2, CO_2, and NO_x.
	Monitor actual net electrical output, expressed in megawatt-hours. Actual net electrical output shall be provided for individual units and as a facility total for all units included in the calculation demonstrating compliance.
EU 1, EU 2, EU 3	In accordance with 310 CMR 7.29(5)(a)3.d.i., sample each shipment of coal at the time received and test the coal for chlorine and mercury content. Perform stack testing for mercury in accordance with 310 CMR 7.29(5)(a)3.d.ii..

* Legend to Abbreviated Terms within Table 3:

EU# = Emission Unit Number
NO_x = Nitrogen Oxides
SO_2 = Sulfur Dioxide
CO_2 = Carbon Dioxide

Table 4 *	
EU#	RECORD KEEPING REQUIREMENTS
EU 1, EU 2, EU 3, EU 4	Maintain a record of actual emissions for each regulated pollutant for each of the preceding 12 months. Actual emissions shall be recorded as a facility total for all units included in the calculation demonstrating compliance. Actual emissions provided under this section shall be recorded in accordance with 40 CFR Part 75 for SO_2, CO_2, and NO_x
	Maintain a record of actual net electrical output for each of the preceding 12 months, expressed in megawatt-hours. Records of actual net electrical output shall be maintained for individual units and as a facility total for all units included in the calculation demonstrating compliance.
	Maintain a record of the resulting output-based emission rates for each of the preceding 12 months, and each of the 12 consecutive rolling month time periods, expressed in pounds per megawatt-hour. Output based emission rates shall be provided for individual emission units and as a facility total for all units included in the calculation demonstrating compliance.
	Keep all measurements, data, reports and other information required by 310 CMR 7.29 on-site for minimum of five years, or any other period consistent with the affected facility's Operating Permit.
EU 1, EU 2, EU 3	Pursuant to 310 CMR 7.29(5)(a)3.d.i., maintain records of mercury and chlorine content of each shipment of coal as tested at the time received. Maintain records of each stack test for mercury as per 310 CMR 7.29(5)(a)3.d.ii..

* Legend to Abbreviated Terms within Table 4:

EU# = Emission Unit Number
NO_x = Nitrogen Oxides
SO_2 = Sulfur Dioxide
CO_2 = Carbon Dioxide

Table 5 *	
EU#	REPORTING REQUIREMENTS
EU 1, EU 2, EU 3, EU 4	By January 30 of the year following the implementation of the ACO for the facility, and January 30 of each calendar year thereafter, the company representative responsible for compliance shall submit a compliance report to the Department demonstrating the facility's compliance status with the emission standards contained in the ACO. Effective July 31, 2006, the company representative responsible for compliance shall submit a compliance report to the Department demonstrating the facility's compliance status with the emission standards contained in 310 CMR 7.29(5)(a). The report shall demonstrate the facility's compliance status with applicable monthly emission rates for each month of the previous calendar year, and each of the twelve previous consecutive 12-month periods. The compliance report shall include all statements listed in 310 CMR 7.29(7)(b)4. [1]
	The Department may verify the facility's compliance status by whatever means necessary, including but not limited to requiring the affected facility to submit information on actual electrical output of company generating units provided by the New England Independent System Operator (ISO), or any successor thereto.
EU 1, EU 2, EU 3	In accordance with 310 CMR 7.29(5)(a)3.d.i., submit a report containing the mercury and chlorine content test results of each coal shipment received with the results of the next stack testing for mercury as required per 310 CMR 7.29(5)(a)3.d.ii..
FACILITY	Submit by January 15, April 15, July 15 and October 15 for the previous three months respectively, a 7.29 construction status report which identifies the construction activities which have occurred during the past three months, and those activities anticipated for the following three months, and progress toward achieving compliance with the ACO, as provided in Section IV F.

Table 5 Notes:

1. If the ISO final settlement of actual electrical output is not available, the facility shall submit a compliance report based on provisional values of actual electrical output. Upon receiving certified ISO values of actual electrical output for all provisional months within the calendar year, the facility shall submit a revised compliance report within 30 days thereafter.

* Legend to Abbreviated Terms within Table 5:

EU# = Emission Unit Number

3. SPECIAL CONDITIONS

1. The Department may verify compliance of 310 CMR 7.29(5) by whatever means necessary, including but not limited to: inspection of a unit's operating records; requiring the facility to submit information on actual electrical output of company generating units provided to that person by the New England Independent System Operator, or any successor thereto; testing emission monitoring devices; and, requiring the facility to conduct emissions testing under the supervision of the Department.

2. The Department is not approving or denying any off-site or non-contemporaneous proposed CO_2 reduction measures at this time. 310 CMR 7.29(5)(a)5.c. and d. provide that compliance with the CO_2 emission limitations may be demonstrated by using offsite reductions or sequestration in addition to onsite reductions, as long as certain established conditions are met. However, while there is a provision for using early reductions of SO2 to meet the SO2 emissions limit in 310 CMR 7.29(5)(a)2.a., there is no similar regulatory provision for use of early reductions of CO2 for compliance with 310 CMR7.29(5)(a)5. The Department is in the process of developing provisions for the quantification and certification of Greenhouse Gas (GHG) reductions for use in demonstrating compliance with the CO_2 emission limitations contained in 310 CMR 7.29. The Department will review and approve or deny proposals for off-site, sequestration, or non-contemporaneous reductions (i.e. early on-site reductions) of CO2 or other GHG after adoption of amendments to 310 CMR 7.00: Appendix B, and other regulatory sections, if necessary.

3. Ammonia (NH_3) emissions, or "ammonia slip", from Selective Catalytic Reduction on Units 1, 2 and 3 shall not exceed 2 parts per million by volume, dry basis corrected to 3 percent Oxygen (O_2), measured at the stack.

4. Ammonia (NH_3) emissions, or "ammonia slip", from Selective Non-Catalytic Reduction on Unit 4 shall not exceed 10 parts per million by volume, dry basis corrected to 3 percent Oxygen (O_2), measured at the stack.

5. The facility shall maintain continuous compliance at all times with the terms of the ACO and this Exhibit, consistent with the applicable emission rates in 310 CMR 7.29.

6. Should a condition of air pollution occur as a result of the operation of these units, then the facility shall immediately take appropriate steps to abate said condition even though the facility is otherwise in compliance with the ACO and 310 CMR 7.29.

APPENDIX 2

TRC
Customer-Focused Solutions

USGen New England, Inc.
Salem Harbor Station
310 CMR 7.29 Emissions Control Project

Environmental Impact Statement

Prepared By:

TRC Environmental Corporation
Boott Mills South
Foot of John Street
Lowell, MA 01852

On behalf of **USGen New England, Inc.**

August 2003

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

1.0 PROJECT DESCRIPTION

1.1 Emissions Control Project

Salem Harbor Station ("Salem Harbor" or the "Facility"), is subject to the recently promulgated regulations at 310 CMR 7.29 (the "7.29 Regulations"), which impose new facility-wide air emission limits.

The Facility is located on approximately 65-acres of land within the City of Salem. The Facility consists of three primarily coal-fired boilers (designated as Units 1, 2 and 3, which have the potential to combust No. 6 fuel oil as backup) and one oil-fired boiler (designated as Unit 4) for a total nominal generating capacity of approximately 755 MW. Presently, Units 1, 2, and 3, are equipped with Low-NO_x Burners (LNB) and Selective Non-Catalytic Reduction (SNCR) systems for control of nitrogen oxide (NO_x) emissions, and Electrostatic Precipitators (ESPs) for control of particulate matter (PM) emissions. Unit #4 is presently equipped with LNB and an ESP to control emissions of NO_x and PM, respectively, in addition to combusting low-sulfur fuel oil for control of sulfur dioxide (SO_2) emissions.

1.2 Emissions Control Equipment

The 7.29 Regulations require applicable facilities to reduce facility-wide air emissions of NO_x, SO_2, and greenhouse gases, including carbon dioxide (CO_2). In order to achieve compliance with the new emission limitations in the 7.29 Regulations, USGen New England, Inc. (USGenNE) has entered into an Administrative Consent Order ("ACO") with the Massachusetts Department of Environmental Protection ("DEP") and other parties, a copy of which is included here as Appendix A. Under the terms of the ACO, Salem Harbor will undertake a number of short-term measures (see Appendix A) and, subject to regulatory approvals and financing considerations, would install and operate the emissions control equipment described below to achieve compliance with the 7.29 Regulations. :

1. **One Selective Catalytic Reduction (SCR) unit for the control of NO_x, capable of treating the combined flue gas of Units 1, 2, and 3.** The SCR will be located downstream of the existing electrostatic precipitators (ESPs), which will remain in place and continue to reduce particulate matter emissions from the flue gas. Use of this SCR will require installation of a gas-to-gas heat exchanger and gas fired reheater to bring the flue gas to the required operating temperature for the SCR.
2. **One dry Flue Gas Desulfurization (FGD) and Fabric Filter (FF) system to reduce coal unit emissions of SO_2.** It will also assist in the control of sulfuric acid, particulate matter, and mercury emissions. The FGD/FF will be sized to treat the entire flue gas stream of Units 1, 2, and 3.
3. **One Selective Non-Catalytic Reduction (SNCR) system for the control of NO_x emissions from Unit 4.** The Facility will also implement a burner tip optimization program and utilization of low-sulfur oil as required in the ACO to reduce NO_x and SO_2 emissions.

In addition to the above referenced work, the Facility proposes to implement an ash reduction process (ARP). The ARP will process fly ash, in order to reduce the unburned carbon in the ash and permit the ash to be recycled as a substitute for cement in the concrete manufacturing process, thereby further reducing, with the target of eliminating, a significant solid waste stream, as well as achieving some of the CO_2 reductions required by the 7.29 Regulations.

The installation of the above referenced emissions control equipment is called the Salem Harbor Generating Station Emissions Control Project ("the Project" or "the Emissions Control Project"). The Project and construction schedule are subject to receipt of all other required governmental authorizations, the arrangement of financing for such construction and potentially, the approval by the U.S. Bankruptcy Court for the District of Maryland (Greenbelt Division), in which the bankruptcy proceeding of USGenNE is now pending. Upon receipt of such financing and all necessary permits and approvals, the Emissions Control Project would primarily be constructed on the southwestern side of the existing power plant building (Figure 1). USGenNE has received confirmation from the Executive Office of Environmental Affairs (EOEA) that the Project does not require further review under the Massachusetts Environmental Policy Act (MEPA). See Appendix F.

1.3 Ancillary Structures

There are several ancillary structures proposed in conjunction with the construction and/or operation of the Project. These include: 1) a crane platform to support construction; 2) a water treatment building and two associated tanks; 3) a new ignition fuel tank and the relocation of an existing propane tank; 4) gas metering equipment, 5) concrete tie blocks, and 6) two new transformers and expansion of a switchyard.

1.3.1 Crane Platform

A pile supported concrete platform will be constructed in order to support the weight of a crane. The crane is needed to offload construction materials and pre-fabricated structures from vessels delivering Project equipment at the northern bulkhead and to install this equipment. The platform will be located landward of the existing northern bulkhead and westward of the discharge canal. The crane platform will be located entirely on upland, but is within 100 feet of the shoreline, and therefore requires submittal of a Notice of Intent (NOI) under the Wetlands Protection Act for work in the buffer zone. The current location of the platform is partially covered by Tank D-5 (slated for removal next year - see Order of Conditions No. 64-348 included as Appendix B), partially occupied by a manmade waste water treatment basin that is scheduled to be filled next year (see Negative Determination of Applicability, dated November 15, 2002 included as Appendix C); and partially includes a vacant area in and around these structures that is covered with bituminous material and or gravel. No vegetation currently exists in this area.

1.3.2 Water Treatment Building and Associated Tanks

The Project expects to use treated effluent from the SESD Facility for process makeup requirements for the FGD system. A 60 by 60 foot water treatment building containing filtration

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN CONFORMITY WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS OF THE COMMONWEALTH OF MASSACHUSETTS.

REGISTERED PROFESSIONAL ENGINEER DATE

DATE: AUGUST 22, 2003

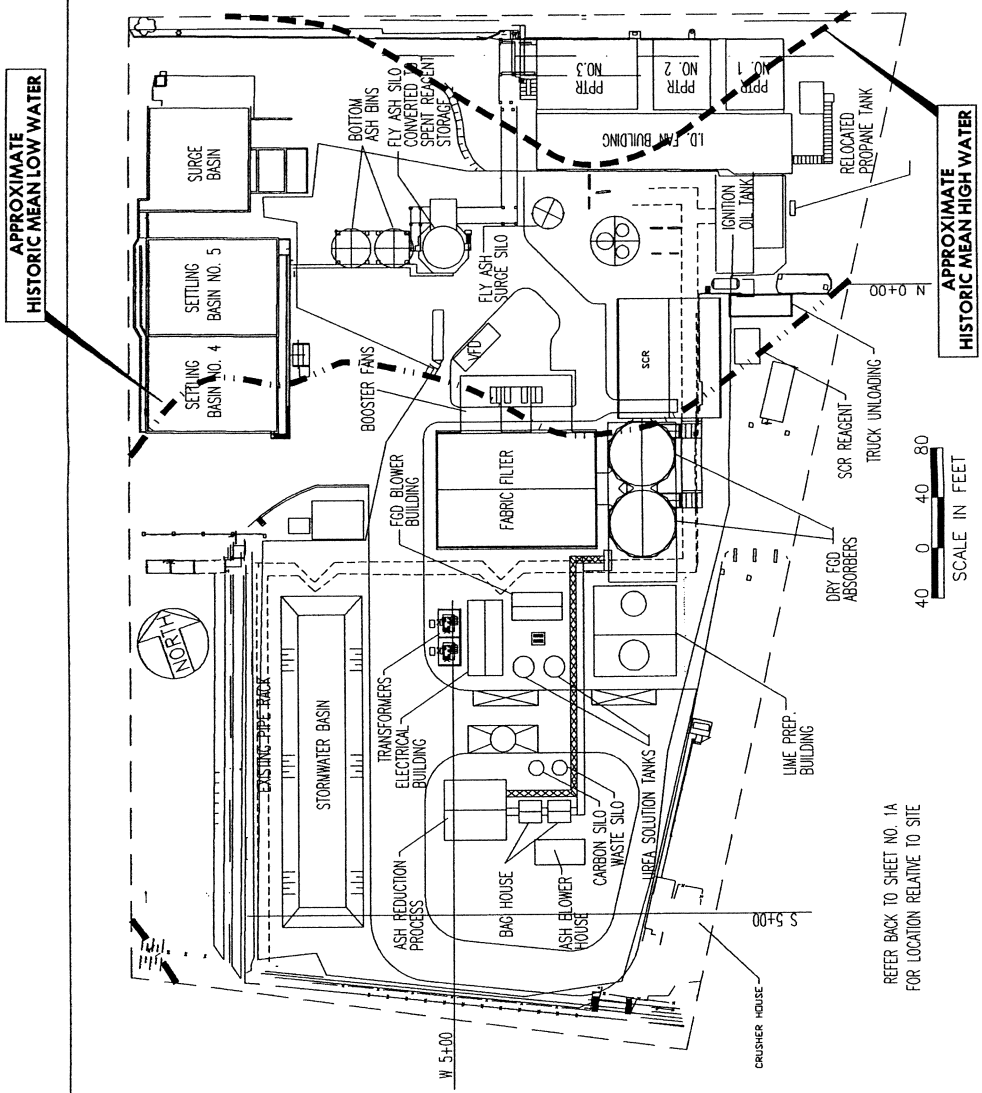
PLANS ACCOMPANYING PETITION OF USGen NEW ENGLAND, INC., TO INSTALL AND MAINTAIN EMISSION CONTROL EQUIPMENT AND MAINTAIN EXISTING STRUCTURES ON FILLED TIDELANDS WITHIN THE CORPORATE BOUNDARIES OF SALEM.

PLAN VIEW OF EXISTING AND PROPOSED STRUCTURES.

SHEET 1A

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN CONFORMITY WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS OF THE COMMONWEALTH OF MASSACHUSETTS.

REGISTERED PROFESSIONAL ENGINEER DATE



DATE: AUGUST 22, 2003

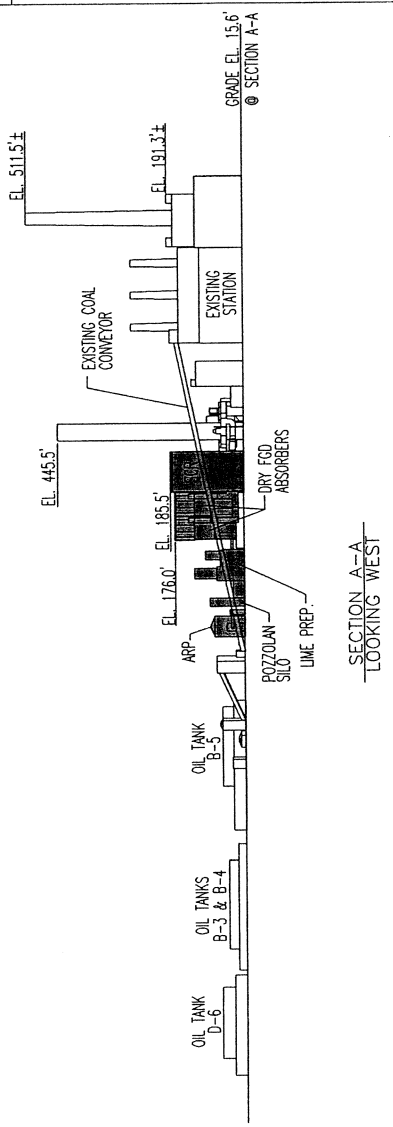
PLANS ACCOMPANYING PETITION OF USGen NEW ENGLAND, INC., TO INSTALL AND MAINTAIN EMISSION CONTROL EQUIPMENT AND MAINTAIN EXISTING STRUCTURES ON FILLED TIDELANDS WITHIN THE CORPORATE BOUNDARIES OF SALEM.

CLOSE-UP VIEW OF PROPOSED STRUCTURES.
SHEET 1B

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN CONFORMITY WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS OF THE COMMONWEALTH OF MASSACHUSETTS.

REGISTERED PROFESSIONAL ENGINEER

DATE



SECTION A-A
LOOKING WEST

80 0 80 160
SCALE IN FEET

NOTES:
1. SHADING DENOTES EMISSION CONTROL PROJECT. OTHER STRUCTURES ALREADY EXISTING.
2. ELEVATIONS OF PROPOSED STRUCTURES ARE APPROXIMATE.

DATE: AUGUST 22, 2003

PLANS ACCOMPANYING PETITION OF USGen NEW ENGLAND, INC., TO INSTALL AND MAINTAIN EMISSION CONTROL EQUIPMENT AND MAINTAIN EXISTING STRUCTURES ON FILLED TIDELANDS WITHIN THE CORPORATE BOUNDARIES OF SALEM.

ELEVATION PLAN–LOOKING WEST.
SHEET 1C

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN CONFORMITY WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS OF THE COMMONWEALTH OF MASSACHUSETTS.

REGISTERED PROFESSIONAL ENGINEER DATE

CLOSE-UP OF WATER TREATMENT EQUIPMENT

REFER BACK TO SHEET NO. 1A FOR LOCATION RELATIVE TO SITE

DATE: AUGUST 22, 2003

PLANS ACCOMPANYING PETITION OF USGen NEW ENGLAND, INC., TO INSTALL AND MAINTAIN EMISSION CONTROL EQUIPMENT AND MAINTAIN EXISTING STRUCTURES ON FILLED TIDELANDS WITHIN THE CORPORATE BOUNDARIES OF SALEM.

CLOSE-UP OF WATER TREATMENT EQUIPMENT

SHEET 1D

equipment and two associated tanks are proposed to be installed on the northeastern side of the site, just south of the Facility's property line with the South Essex Sewerage District Facility (SESD Facility). The location is currently vacant and is covered with either bituminous materials or gravel and is devoid of vegetation.

In order to recycle the treated effluent, the following equipment is required:

- A pumping station and force main to divert secondary treated effluent from SESD's chlorine contact tank to the Project site.
- Filtration equipment (i.e., Multimedia filter or equivalent).
- Sodium hypochlorite storage and feed equipment.
- A water storage tank with a capacity of approximately 600,000 gallons.
- A smaller water treatment tank with a capacity of 20,000 gallons.
- Piping from the water treatment system over to the Project site.

1.3.3 Ignition Fuel Tank and Propane Tank

A new ignition oil storage tank will be located south of the existing oil pumphouse in a concrete curbed area. This tank will replace existing tanks No. S-1 and S-2, which will be removed as they are in the footprint of the Project. An oil truck unloading station will be constructed adjacent to the oil tank. The existing propane tank will be relocated if necessary.

1.3.4 Gas Metering Equipment

USGenNE will use natural gas for reheating flue gas for proper operation of the Selective Catalytic Reduction (SCR) equipment. Natural gas will be delivered to the site by the local gas distribution company by extending its existing distribution main in Fort Avenue which borders the Facility's property line. Gas metering equipment will be installed on the west side of the Facility's property and a gas line will be installed on the USGenNE property from the meter station to the SCR equipment.

1.3.5 Concrete Tie Blocks

Two concrete tie blocks are proposed just landward of the northern bulkhead. These will be installed to help secure vessels docking at the bulkhead during equipment offloading. USGenNE has already received an Order of Conditions from the Conservation Commission (Con Com) for construction of the tie blocks in this buffer zone area (Appendix B, Order of Conditions No. 64-348). A wood fender is also proposed on the top of the existing bulkhead to help protect the bulkhead during docking.

1.3.6 Transformers and Expansion of Switchyard

The existing electrical switchyard located to the west of the power house will be expanded to include a new 115 kv switch bay. New 115 kv cable will be installed below grade from the new switch bay to the two new 115 kv/4160 v power transformers that will serve the ECP and will be located within that area.

1.4 Construction Schedule

The ACO construction schedule, which is subject to the approval and financing limitations referenced above, calls for construction to begin between the 2nd and 3rd quarters of 2004. Construction of the Emissions Control Project is anticipated to take approximately 18 to 24 months.

2.0 NATURAL ENVIRONMENT

2.1 Air

2.1.1 Background

Salem Harbor Station consists of three primarily coal-fired boilers (Units 1, 2 and 3, that also have the potential to combust No. 6 fuel oil as backup) and one fuel oil-fired boiler (Unit 4) for a total nominal generating capacity of approximately 755 MW. Unit 1 has a maximum rated heat input capacity of 954 mmBtu/hr and an electrical net output rating of 84 MW. Unit 2 has a maximum rated heat input capacity of 966 mmBtu/hr and an electrical net output rating of 81 MW. Unit 3 has a maximum rated heat input capacity of 1,696 mmBtu/hr and an electrical net output rating of 150 MW. Unit 4 is a Riley Stoker boiler with a maximum rated heat input capacity of 4,800 mmBtu/hr and net electrical output of 440 MW.

Units 1, 2 and 3 burn low sulfur coal and are each presently equipped with Selective Non-Catalytic Reduction (SNCR) and Electrostatic Precipitator (ESP) systems to reduce NO_x and particulate matter (PM), respectively, in the boiler flue gas. Additionally, Units 1, 2 and 3 are equipped with Low-NO_x Burners (LNB) and Unit 3 employs overfire air (OFA) to further reduce NO_x emissions. Unit 4 is presently equipped with LNB and an ESP for NO_x and PM emission control, respectively. SO_2 emissions are controlled by combusting low-sulfur coal in Units 1, 2 and 3, and low-sulfur No. 6 fuel oil in Unit 4.

2.1.2 Operational Mitigative Measures

The emissions control equipment is designed to ultimately ensure compliance with the 7.29 Regulations' output-based emission standards of 1.5 lb NO_x/MW-hr and 3.0 lb SO_2/MW-hr, resulting in reductions from baseline levels of more than 2,700 tons of NO_x per year and more than 8,000 tons of SO_2 per year. To achieve compliance in accordance with the ACO, the control technologies/procedures included in the consent order are:

- **One Selective Catalytic Reduction ("SCR") unit for the control of NOx from Units 1, 2 and 3.** The SCR will be located downstream of the existing electrostatic precipitators ("ESPs"), which will remain in place and continue to reduce particulate matter emissions from the flue gas. Use of this SCR will require installation of a gas-fired reheater to bring the flue gas to the required operating temperature for the SCR. The SCR will be sized to treat the combined flue gas stream of Units 1, 2 and 3. The current SNCR system for Units 1,2,and 3 will be removed.

- **One Dry Flue Gas Desulfurization ("FGD" and Fabric Filter ("FF") system for the control of the SO2 emissions from Units 1, 2 and 3.** The FGD/FF will also assist in the control of sulfuric acid, particulate matter, and mercury emissions. The FGD/FF will be sized to treat the combined flue gas stream of Units 1, 2 and 3.

- A Selective Non-Catalytic Reduction (SNCR) system will also be implemented to control NO_x emissions from Unit 4.

- Once the Units 1, 2 and 3 emissions control systems are in place, the balance of SO_2 reductions necessary for compliance will be managed by selection of fuel oil sulfur content for Unit 4, coal sulfur content and SO_2 control device performance for Units 1, 2 and 3.

In addition to the control technologies/procedures required in accordance with the ACO implementing Rule 7.29, additional process equipment will be employed to create further emissions reductions and environmental benefits at the Salem Harbor Station:

- An integrated Ash Reduction Process (ARP) to produce saleable fly ash from Units 1, 2 and 3.

- Activated carbon injection and fabric filter technology will be used to control mercury from the ARP.

- Flue gas from the ARP fabric filter will be directed to the combined flue gas stream of Units 1, 2 and 3 for further treatment in the SCR and FGD/FF system.

Units 1, 2 and 3

Selective Catalytic Reduction

The SCR will be located downstream of the existing electrostatic precipitators ("ESPs"), which will remain in place and continue to reduce particulate matter emissions from the flue gas. Use of this SCR will require installation of a gas-fired reheater to bring the flue gas to the required operating temperature for the SCR. The SCR will be sized to treat the combined flue gas stream of Units 1, 2 and 3.

Ammonia (NH_3) will be injected into the flue gas stream upstream of a catalyst bed. On the catalyst surface, NH_3 reacts with NO_x in the flue gas to form nitrogen gas (N_2) and water (H_2O). Ammonia for the SCR will be made on-site from urea.

Flue Gas Desulfurization / Fabric Filter

To remove the SO_2 from Units 1, 2 and 3, the combined flue gas stream will be ducted to a dry FGD scrubbing system, utilizing Spray Dry Absorbers, which is followed by a fabric filter. In the scrubber system, SO_2 is removed from the flue gas with a lime reagent (CaO). The lime will be mixed with water to produce a particulate slurry of calcium hydroxide $\{Ca(OH_2)\}$. In the FGD, the entering hot flue gas is sprayed with the finely atomized calcium hydroxide slurry. The water in the slurry evaporates as the SO_2 reacts with the sorbent, cooling the flue gas and forming dry particulate material including unreacted calcium hydroxide, calcium sulfite, calcium sulfate, lime grit and fly ash. The flue gas is ducted to the Fabric Filter where the particulate material is collected on the surface of the filter. Additional SO2 reduction occurs as the flue gas contacts the dry material that includes some unreacted reagent. A portion of the solids is

recycled back to the FGD for additional SO_2 removal and the remainder is spent reagent to be collected for disposal.

Ash Reduction Process

The Facility currently produces approximately 80,000 tons (dry weight) of fly ash annually from coal combustion used in the generation of electricity. Currently, the ash contains up to 25% unburned carbon. The addition of an Ash Reduction Process (ARP) is designed to remove the unburned carbon and allow all of the Facility's coal fly ash to be recycled as a replacement for Portland cement in the production of concrete. As a result, this is expected to reduce combustion used in making cement and in turn, reduce carbon dioxide emissions from the involved cement manufacturing facilities. The expected reduction in carbon dioxide emissions would contribute to meeting the carbon dioxide emission reduction obligations set forth in 7.29 Regulations.

A water-to-gas cooler will be utilized to reduce the temperature of the exhaust gas from the ARP to 300 °F. Ash present in the flue gas will be collected in a baghouse downstream of the ARP. Activated carbon will be injected into the exhaust gas downstream of this baghouse for mercury control and will be collected in a second baghouse. ARP exhaust will then be routed to combined flue gas stream of Units 1, 2 and 3 upstream of the proposed SCR and FGD/FF systems to control ARP emissions. Incorporation of the carbon injection, ARP baghouses and ducting the ARP exhaust to Units 1, 2, and 3, SCR, FGD and FF are designed to ensure that the overall Emissions Control Project will result in reductions in NO_x, SO_2, PM and other pollutants from Units 1, 2 and 3, as well as providing the CO_2 offset benefit described above.

Unit 4

The ACO includes the following emissions reduction measures for Unit 4:

Burner Tip Optimization

A burner tip optimization (BTO) program will be implemented on Unit 4 by the end of October 2003 in order to achieve early control of NO_x emissions. The amount of NO_x control will vary based on many different variables; however, it is anticipated that the BTO program may reduce NO_x emissions by as much as 10% while maintaining boiler reliability.

Selective Non-Catalytic Reduction

Selective Non-Catalytic Reduction (SNCR) is a process designed to control NO_x emissions from fossil fuel combustion. SNCR involves the injection of an aqueous solution of urea into the upper furnace region of a boiler where it reacts with NO_X in the presence of oxygen to form primarily nitrogen gas and water. The Facility is proposing to inject an aqueous solution of urea into Unit 4.

Installation of SNCR on Unit 4 will increase the potential to emit CO and ammonia, as by-products of SNCR, triggering 310 CMR 7.02 Plan Approval requirements, including analysis of Best Available Control Technology (BACT). A modification to the previously submitted 7.02

Plan Approval application, including BACT analyses for CO and ammonia slip, was submitted to DEP for its review and approval on July 11, 2003. The proposed 10 ppm slip level is the same as the ammonia slip level for Unit 4 specified in the ACO.

2.1.3 Operation Impacts

The Facility's emissions after implementation of the 7.29 Regulation via the ACO, will continue to exit through three flues from the existing approximately 430-foot tall common stack for Units 1, 2, and 3 and one flue from the existing approximately 500-foot tall stack for Unit 4. The new controls are designed to ensure compliance with current regulations and permit limits, as well as the 7.29 Regulations and the ACO.

Air quality dispersion modeling analyses were conducted in support of the Project to ensure that the Facility would continue to comply with the National Ambient Air Quality Standards (NAAQS) after the Project was complete. The following paragraphs describe the air impact modeling analyses that demonstrates that the predicted post-Project impacts will not cause an exceedance of National Ambient Air Quality Standards.

Compliance with the ACO, 310 CMR 7.29, and the NAAQS

Prior to performing the air quality dispersion modeling studies for Salem Harbor's Emissions Control Project, a detailed modeling protocol was prepared and submitted to the DEP for its review and approval. Modeling was conducted in accordance with that protocol.

The calculated pollutant concentrations from the maximum capacity operating scenario are presented in Table 1 where they are compared to the NAAQS. The table shows that potential predicted Facility impacts plus representative background concentrations result in total concentrations that will continue to comply with the NAAQS after the Project has been completed.

In a second analysis the CALPUFF model was used to determine the ambient 3-hour SO_2 ground-level concentrations due to shoreline fumigation.

The calculated pollutant concentrations (resulting from the second study) summed with the 3-hour background SO_2 concentration remain below the 3-hour SO_2 NAAQS even for shoreline fumigation events. The modeled 3-hour SO_2 concentration plus background is less than 41 percent of the 3-hour SO_2 NAAQS.

Ammonia

The ammonia slip from the new SCR for Units 1, 2, and 3 will be 2 parts per million (ppm). The ammonia slip from the new SNCR on Unit 4 will be 10 ppm. These ammonia slip limits are sufficiently low to ensure that no detectable ammonia odor will occur at ground level. To further minimize the potential for ammonia releases during transportation, storage and handling, for use in the SCR for Units 1, 2, and 3, the Facility is proposing to utilize urea, which will be used to make ammonia on-site on an as-needed basis. Thus, only a small volume of ammonia will exist

Table 1. Modeling Results for Maximum Capacity Operating Scenarios

Pollutant	Averaging Period	NAAQS ($\mu g/m^3$)	Year of Modeled Concentration	Modeled Concentration[a] ($\mu g/m^3$)	Modeled Concentration Location		Background Concentration ($\mu g/m^3$)	Total Concentration[b] ($\mu g/m^3$)	Distance[c] (m)	Direction[c] (degrees)
					UTM East (m)	UTM North (m)				
CO	1-Hour	40,000	1994	49.3	346,895	4,709,808	8,050	8,099.3	1,100	80
	8-Hour	10,000	1993	15.0	341,812	4,709,717	4,830	4,845.0	4,001	271
SO_2	3-Hour	1,300	1992	144.9	341,773	4,709,123	147	291.9	4,069	263
	24-Hour	365	1995	33.3	337,355	4,706,539	66	99.3	9,000	250
	Annual	80	1994	2.5	352,506	4,715,402	18	20.5	8,847	49
PM_{10}	24-Hour	150	1995	4.2	337,455	4,706,539	64	68.2	8,906	250
	Annual	50	1994	0.3	352,506	4,715,402	30	30.3	8,847	49
NO_2	Annual	100	1994	0.4	352,506	4,715,402	43	43.4	8,847	49

[a]Result of modeling Units 1, 2, 3, and 4 with maximum capacity dispersion parameters and emission rates. Units 1, 2, and 3 exhausted through an equivalent diameter stack. Modeled concentrations reflect the highest second-highest short-term and maximum annual average modeled concentrations.
[b]Total concentration = Modeled concentration + Background concentration.
[c]Distance and direction from the approximate center of the facility (345,812 m UTM East and 4,709,617 m UTM North).

on-site on a transient basis, eliminating the potential for a significant ammonia spill or leak. This avoids the need for storing large amounts of aqueous or anhydrous ammonia on-site that is associated with many SCR systems.

Visible Plume

Visible particulate matter emissions (opacity) from the Facility's stacks are currently minimal (near zero opacity) and are expected to be near zero opacity post-Project. SO_3 is formed in the boiler furnace and from oxidation of SO2 to SO3 by the SCR. Some SO3 combines with ammonia slip to form particulate matter. Approximately 90% of the remaining SO3 will be collected in the FGD and fabric filter. The remaining small fraction of SO3 is available to react with water in the flue gas to form sulfuric acid. The emission control equipment will reduce emissions of SO3 and sulfuric acid from current levels. Since there is no visible surfuric acid plume currently, none is expected to occur due to installation of the emissions control equipment.

The plume visibility analysis for the Project evaluates the difference in visible plume formation between the existing operation (without the dry scrubber) and the future operation with a dry FGD system for Units 1, 2, and 3. The methodology of the analysis is to calculate the formation of visible plumes for all hours within the subject meteorological database, but also discriminate the hours when a visible plume forms at night or during inclement weather.

The analysis examined the emission conditions for the Facility without (existing) and with the FGD system to ascertain the average number of visible plumes expected per year. Table 2 presents a summary of the average hours per year of condensed plume formation for the existing and dry scrubber (FGD) operating cases.

Table 2. Visible Plumes for Existing Operations and FGD

Visible Plume Summary	Average Hours Per Year	
	Existing	FGD
Total plumes formed, hours per year	25	3,856
During the night only	13	1,853
During the day only	12	2,003
During obscuring weather (day or night)	13	1,288
During clear weather (day or night)	12	2,568
During the day with clear weather	4	1,284

Source: TRC Visible Plume Study, July 2003

As shown above, the existing operation (without the FGD) results in a very minimal amount of condensed and/or visible vapor plumes during the year. Such plumes will only occur on very cold days with relatively high humidity. Such plumes may be observed during the early morning on calm winter days. However, with the addition of the FGD , the exhaust temperature is lowered and an appreciable amount of water vapor is added to the plume. Thus, a visible plume due to condensed water vapor is more likely.

Table 3 presents the distribution of average annual (daytime only) visible plumes by month for the FGD operation.

Table 3. Units 1, 2, and 3 with FGD – Visible Plumes by Month	
Month	**Hours Per Month of Visible Plume[a]**
January	234
February	223
March	205
April	131
May	61
June	7
July	2
August	2
September	15
October	45
November	139
December	219
Total	**1,284**

[a] During daylight hours (including one hour before sunrise and one hour after sunset), with no obscuring weather.

As shown in Table 3, the hours of visible plume formation are typically during the cooler months with the majority of plumes during the winter (December through February). Only on days with a high ambient temperature and low humidity will the condensed vapor plumes not form – i.e. during the summer months.

Although the FGD will cause an increase in the total number of visible plumes during the year, only a portion of the visible plumes will occur during the daylight hours with clear weather (1,284 hours per year represents about 15% of the hours in a year and about 29% of the clear daytime hours). Additionally, the vapor plumes formed by the dry scrubber operation will occur predominantly during the colder months, and during the early morning hours.

2.1.4 Construction Impacts and Mitigative Measures

Construction activities at the Facility will result in both fugitive dust and exhaust emissions from construction vehicles. Impacts from these emissions will occur in the short-term, during the construction phase of the Project. Construction will occur only during normal working hours. The primary sources of the emissions will be localized, occurring only at the locations where construction activities are taking place or when vehicles are transporting materials to and from the site. To the extent feasible, unpaved roadways, parking and laydown areas on the site will be graveled or paved during the early part of the construction schedule. This will serve to reduce

the amount of fugitive particulate emissions. Fugitive dust will also be reduced using periodic water sprays on the roadways and site service roads. Furthermore, delivery of some equipment modules will be via ships or barges helping to minimize truck traffic to the site.

2.1.5 Conclusions

The conclusions reached from the results of the engineering and air quality modeling analyses are that the Salem Harbor Station Project will meet the state requirements for SO_2 and NO_x control and fully comply with all other applicable air quality requirements.

2.2 Land

2.2.1 Land Type and Acreage Affected

The permanent equipment and structures associated with the Project will occupy an area of approximately 2 acres. This land is currently in industrial use as part of the Facility. The total area of land disturbed during construction as a result of parking, construction laydown, excavation and utility work will be approximately 10 acres.

2.2.2 Subsurface Conditions

Soil bearing capacity is not adequate for the foundations to support the heavy loads for new equipment. Pile foundations to bedrock are planned with pile caps to support the heavy equipment loads. The bottom of the pile caps will be below the frost line. Most are expected to be above the water table. Dewatering is not expected to be needed for construction of most foundations. There will be some cable pits, sump pits, and possibly a few foundations below the water table where dewatering may be required. For these cases and in wet weather, dewatering of the foundation excavation may be needed. Water from construction dewatering activities will be routed to a sedimentation basin then to the on-site wastewater treatment system (WWTS).

There are two active Massachusetts Contingency Plan (MCP) sites at Salem Harbor Station that have not been closed at the time of this submittal. These MCP sites are receiving additional attention to soil and groundwater management in areas potentially affected.. Contractors involved with these sites will be given a Soil and Groundwater Management Plan, and Health and Safety Plan and Release Abatement Measure (RAM) Plans. These plans will specify areas that might have contaminated soils or groundwater areas, where contractors will stockpile soils, and what to do in the event there is unexpected soil or groundwater contamination. The contractors will work closely with the on-site USGenNE Environmental Manager, and Licensed Site Professional (LSP) for proper management of soil and groundwater.

2.2.3 Rough Grading Plans

The area for the permanent equipment and structures is currently occupied by two (2) above ground oil storage tanks (ASTs) and related earthen berms; inactive and cleaned wastewater basins; and miscellaneous equipment and structures. The ASTs and miscellaneous structures will be removed or relocated and the earthen berm will be removed. The inactive and cleaned

wastewater basins are being filled as part of the basin closure process. The equipment area will be excavated to the general elevation at approximately the bottom of the pile caps for construction of the piles and foundations. The stormwater detention basin will be excavated and constructed for collection of stormwater runoff and foundation dewatering during construction. Excess excavated material will be used onsite or transported offsite, as appropriate, in either case in accordance with all applicable regulations.

All construction parking will be located at the southwestern area of the site, which will be surfaced with compacted gravel. The area will be graded to drain to a perimeter stormwater swale where stormwater will be collected and then pumped to the detention basin. After construction is completed, the gravel will be removed, and the area will be restored.

2.3 Water and Wetlands

The shoreline along the property consists of riprap and bulkhead and there are no wetlands, marshes, seasonal wet areas, or any existing or proposed flood control or wetland easements. The vast majority of the site is covered with industrial structures such as fuel oil tanks, the turbine building, wastewater treatment tanks and basins, the coal pile, piping, electric transmission towers and lines, transformers, and other related infrastructure. Remaining areas are almost entirely paved or contain gravel. There is no vegetation at the footprint of the proposed Emissions Control Project site. There is a vacant upland area on the southwest of the site (west of tanks B-3 and B-5) that will be used for parking.

For construction of the Project, a portion of the 100 foot buffer zone will be altered to allow for a crane to offload equipment from barges at the north bulkhead. This area currently consists of gravel surface and oil tank No. D-5, that is no longer used and slated for removal prior to commencement of the Emissions Control Project, and a former manmade waste water treatment basin that is schedule to be filled next year (see Negative Determination of Applicability, dated November 15, 2002, included as Appendix C). Work in this buffer zone will be performed consistent with an Order of Conditions (OOC) which has been requested of the Salem Conservation Commission (Con Com). The work will include construction of a pile-supported concrete platform to support the weight of a construction crane needed to offload equipment from barges tied at the north bulkhead. The platform will be located entirely on upland, some of which is in the "buffer zone". A NOI was filed with the Con Com in August, 2003, and review is ongoing.

2.3.1 Water Supply

Groundwater in the area is not used for drinking water and there are no surface water supplies at or near the site. As such, the site does not contribute to an existing or potential public, or private water supply. In order to minimize the Project's impact on potable water supplies, the Project expects to use treated effluent from the South Essex Sewerage District Facility (SESD Facility) for most of its process water needs. A 60 by 60 foot water treatment building, a water tank with an approximate capacity of 600,000 gallons, and a smaller 20,000 gallon water treatment tank will be located in the northeastern portion of the site adjacent to the SESD Facility property line.

2.3.2 Surface Water Quality Protection

In order to prevent sand and silt from entering Salem Harbor during construction, sediment retention devices will be installed and maintained along the west bank of the discharge canal, the north bulkhead, and around catch basins as needed to comply with the Con Com OOC. This will reduce overland runoff that may occur in the direction of the discharge canal. In addition, runoff water from the emission control equipment construction site will be channeled to a new stormwater detention basin. Use of the new detention basin will allow suspended sediments to settle out prior to discharge through the Facility's WWTS to Salem Harbor. Retention devices will also be installed in any other areas required by the OOC as needed to prevent disturbed sediments from washing into Salem Harbor.

2.3.3 Construction Stormwater Pollution Prevention Plan

The Project work triggers the one-acre threshold for filing a NOI with EPA and preparation of a Construction Stormwater Pollution Prevention Plan (CSWPPP), both prior to construction, in accordance with the new National Pollutant Discharge Elimination System (NPDES) regulations for stormwater runoff from construction activities. The CSWPPP will be completed as design detail is developed, and will provide further details as required with respect to stormwater design and best management practices to minimize impacts from stormwater runoff during project construction.

2.3.4 Stormwater Drainage Plan for Operations (Permanent Erosion/Sedimentation Controls)

The completed emissions control equipment area, will include structures, paved areas and rock surfaced areas. These hard surfaces minimize erosion and sedimentation. Stormwater will be collected in a stormwater sewer and drained by gravity or pumped to a stormwater detention basin for settling and solids control. The water from the basin will then be pumped to the Facility's WWTS for further treatment. Truck unloading areas will be hard surfaced and curbed and stormwater from these areas will be collected and pumped to the WWTS. The effluent from the WWTS will be discharged to Salem Harbor at the existing outfall which will continue to meet the applicable NPDES requirements.

2.3.5 Areas Subject to Flooding

A portion of the site is within the 100 year flood plain and is defined as Zone A-4 on the FEMA flood map. This area contains no vegetation and consists of paved/graveled areas and structures. The Project's drainage system will be the "permanent method to be used to control erosion."

The site is not used for flood storage and therefore the Project will have no effect on the incidence of flooding. The site is not defined as land subject to flooding under the Wetlands Protection Act.

2.3.6 Sewage Disposal

Sewage generated from the Project will be limited. Refer to Section 4.2 for a discussion of sewage disposal.

2.4 Energy

The Project will require an estimated additional 12 megawatts (MW) of power above the Facility's existing requirements. This power will be consumed directly by the Facility. As a result, the Facility will have a total net generating capacity of approximately 743 MW (755 MW-12 MW). The electricity to run the Facility post-Project will be supplied from within the Facility. The direct sources of energy will be the same as they are today.

2.5 Noise

2.5.1 Introduction

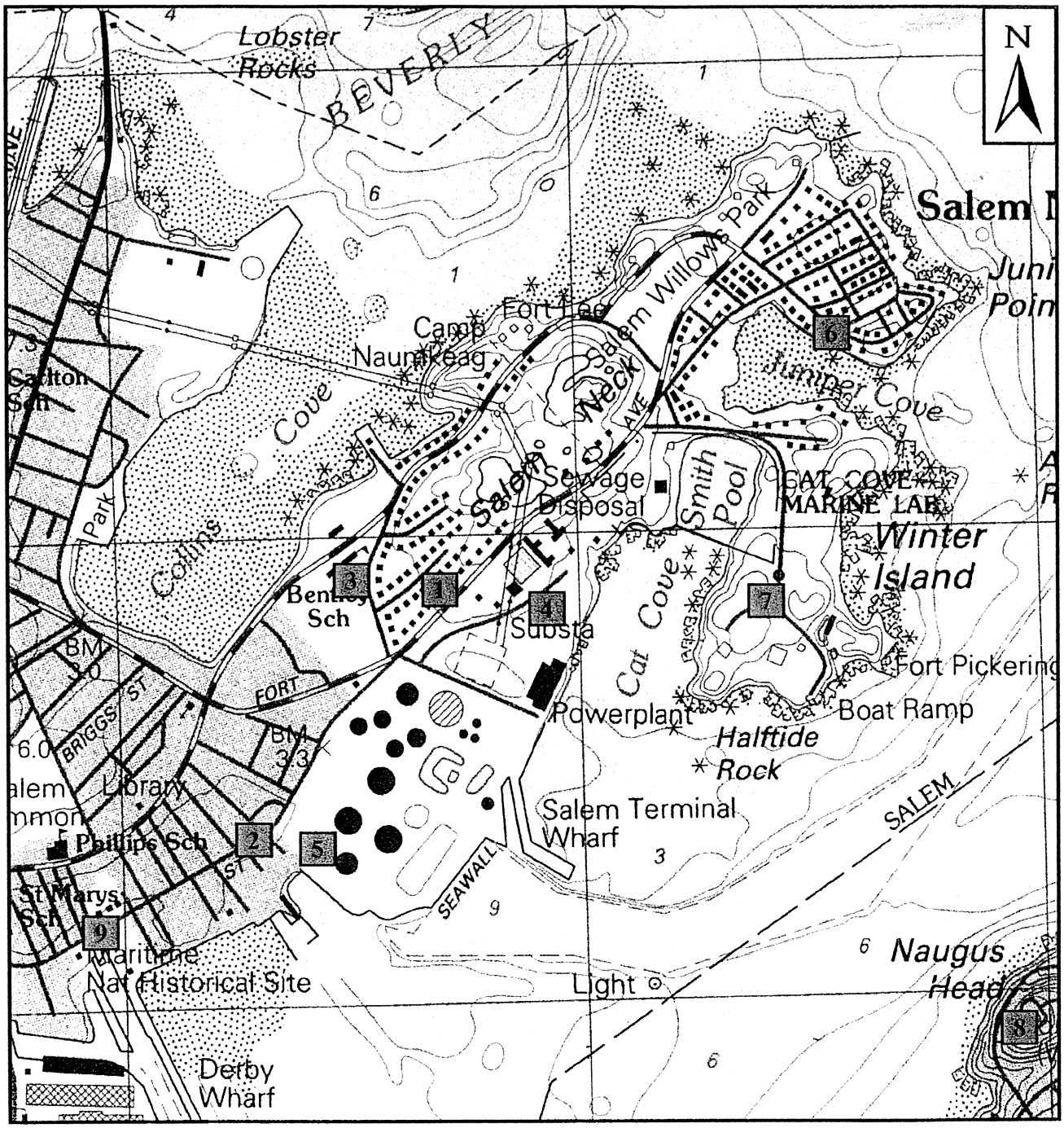
Construction of the Project will involve outdoor work within the existing property. USGenNE will comply fully with the City of Salem Ordinances and DEP guidelines concerning noise impacts, including but not limited to the provisions regarding sound levels and hours of construction. USGenNE recognizes the importance of managing the Project in a manner which causes the least disturbance to its immediate neighbors and to the City of Salem, and has adopted targets described below which are more stringent than the applicable requirements.

2.5.2 Existing Noise Levels

The neighborhood area currently includes residential and some commercial uses, Salem Harbor, and a wastewater treatment facility. The existing noise environment in the vicinity of the Project has been characterized through ambient noise monitoring (conducted on December 14-15, 2000) at selected assessment locations, which were identified through the use of topographic maps, and later confirmed during the noise monitoring program. These locations are identified on Figure 2 and include the following:

1. Fort Avenue (NW of power block)
2. Fort Avenue / Derby Street (west of power block)
3. Bentley Elementary School
4. Bayview Avenue
5. Winter Island Park
6. Naugus Avenue
7. Orange Street / Derby Street

Continuous 24-hour monitoring was conducted at the two most proximate off-site locations (the two Fort Avenue locations). The remaining locations featured shorter term (30 minute)



Monitoring Locations

1. Fort Avenue (NW of power block)
2. Fort Avenue (west of power block)
3. Bentley Elementary School
4. South Essex Sewerage District (onsite)
5. Tank Farm (onsite)
6. Bayview Avenue
7. Winter Island Park
8. Naugus Avenue
9. Orange Street/Derby Street

Salem Harbor Station

Figure 2. Noise Monitoring Locations

Source: USGS Salem, MA 15' Quadrangle

TRC

monitoring during the daytime and late at night. Daytime measurements were performed between the hours of 9 a.m. and 6 p.m. and late night measurements between the hours of 12 a.m. and 5 a.m.

In addition to the overall sound levels, octave band measurements (nine standard frequencies from 31.5 to 8,000 Hz) were performed at all locations (including the continuous monitoring locations).

2.5.2.1 Monitoring Results

Existing noise sources in the area during the day consisted of a combination of local vehicular traffic noise and noise from the Facility. At Naugus Head, noise from wave and water action was a more prominent feature of the noise environment than any other source. During the late night hours, when traffic was less pronounced, noise generated by the Facility was the dominant noise feature at all locations except at Naugus Head (where water noise was more noticeable). However, it should be noted that the Facility was not audible at the Orange Street/Derby Street location during the day or late at night. The measured data are summarized in Table 4.

Table 4. Overall Measured Short-Term Ambient Sound Levels (dBA)

Location	L_{90}		L_{10}		L_{eq}	
	Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime
Fort Avenue (NW of power block)	49	48	69	52	64	52
Fort Avenue / Derby Street (West of power block)	42	39	52	46	49	44
Bentley Elementary School	45	45	49	55	49	57
Bayview Avenue	45	40	52	45	50	45
Winter Island Park	45	45	67	50	66	50
Naugus Avenue	46	47	51	55	54	52
Orange Street / Derby Street	48	40	69	52	64	51
SESD Facility Property Line	52	51	66	63	63	60
Tank Farm	45	40	52	45	50	44

A review of these data reveals that very similar L_{90} levels were measured between daytime and nighttime hours at many locations, suggesting that noise from the existing Facility controls the residual (L_{90}) sound level. At the Naugus Avenue location, daytime and late night L_{90} levels were nearly identical as a result of a combination of wave noise and the Facility controlling the residual L_{90} level. Higher L_{10} levels were measured at all locations during the day, due to local vehicular traffic noise.

In addition to the short-term monitoring, continuous 24-hour monitoring was conducted at the two most proximate off-site locations (Fort Avenue and Fort Avenue/Derby Street). These data are summarized in Figures 3 and 4, respectively.

Figure 3 Measured Sound Levels – Location 1

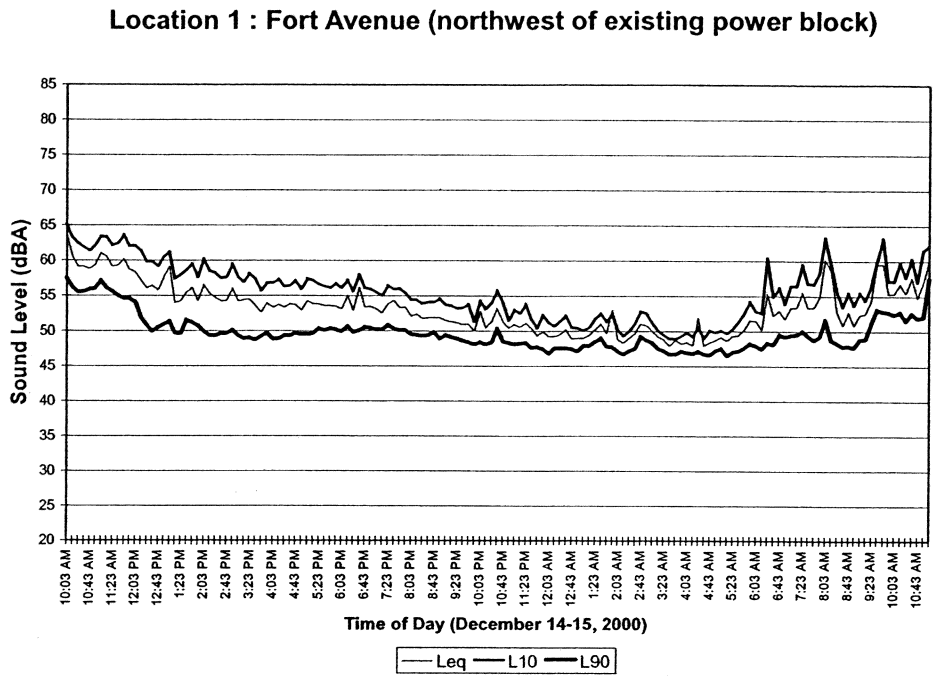
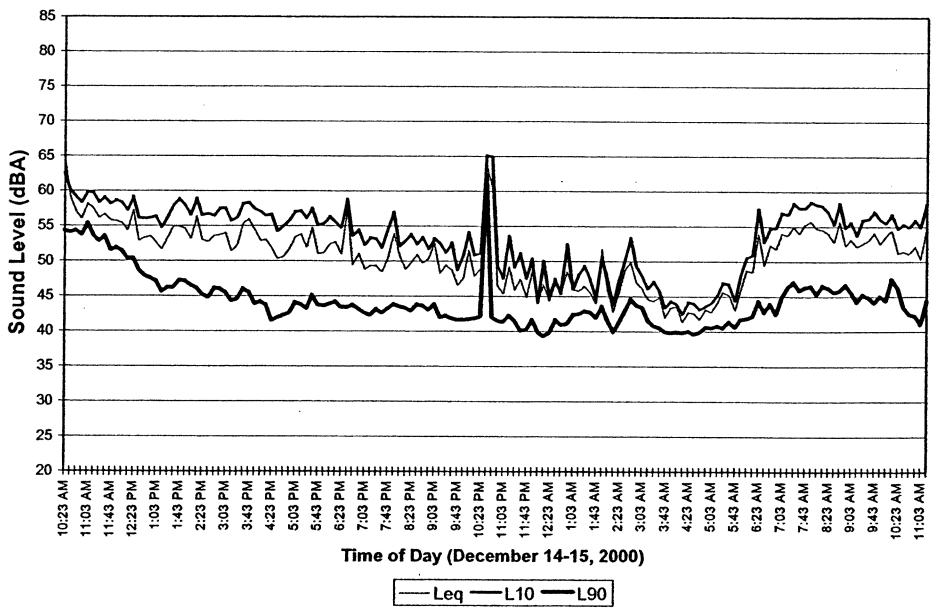


Figure 4. Measured Sound Levels – Location 2



A review of the data in these figures reveals that ambient L_{90} levels across the street from the plant (Figure 3) were in the range of about 48 to 55 dBA, with the lowest levels occurring during

the night. At the second location (Figure 4), further south on Fort Avenue, ambient L_{90} levels late at night dropped to about 40 dBA.

The short-term data from these same continuous locations were in good agreement with the continuous data.

2.5.3 Potential Impacts

Potential impacts from the Project could be caused by increases in sound levels associated with operation of the air emission control equipment and, for the short-term, increases in noise during project construction.

The noise assessment consisted of both a background noise sound monitoring program at existing residential locations and a noise impact evaluation. Background sound monitoring was conducted in order to quantify the existing noise environment. The noise impact evaluation was performed by calculating expected increases in noise associated with "Build" conditions and by calculating expected sound levels due to project construction. The expected sound levels were then compared to noise impact criteria. Potential project noise was also evaluated against the DEP noise standard.

2.5.3.1 Noise Impact Criteria

The Commonwealth of Massachusetts has a noise standard that is applicable to the Project. A source of sound is considered to be in violation of the Department's noise regulation (310 CMR 7.10) if the source increases the ambient broadband L_{90} dBA sound level by over 10 dBA at the Project's property line.

In general, an increase of 3 dBA or less is considered to be imperceptible, while an increase of 10 dBA is perceived as a doubling of the sound. Provided in Table 5 is a set of criteria which has been used to estimate an individual's reaction to increases in noise.

Table 5. Average Ability to Perceive Changes in Sound Levels

Increase (dBA)	Human Perception of Sound
2-3	Barely perceptible
5	Readily noticeable
10	Doubling of the sound
20	"Dramatic change"

Source: Bolt, Beranek, and Newman, Inc. 1973

A significant impact is typically considered to exist when a project of this type causes an increase in sound of 5 dBA or more above existing ambient levels. The Project goal is to be 3 dBA or less above existing ambient levels.

2.5.3.2 Calculated Emissions Control Equipment Noise

Computer modeling was performed in order to calculate sound levels that would be generated by the Project. These levels were evaluated against the existing late night baseline sound levels identified in Table 6 to determine potential impacts of the Project at the representative receptor locations.

The Project will include the addition of mostly fan related sources. Estimated sound level data for many of these sources were developed using methodologies prescribed in the Edison Electric Institutes *Electric Power Plant Environmental Noise Guide* (Miller, et. al., 1984). Fan and other source specification data (e.g., ACFM, pressure drop) were provided by Sargent & Lundy, the Project owner's engineering firm for the Project, and used to develop the noise data for each source. These data were then input into the CadnaA software model, developed by DataKustik.

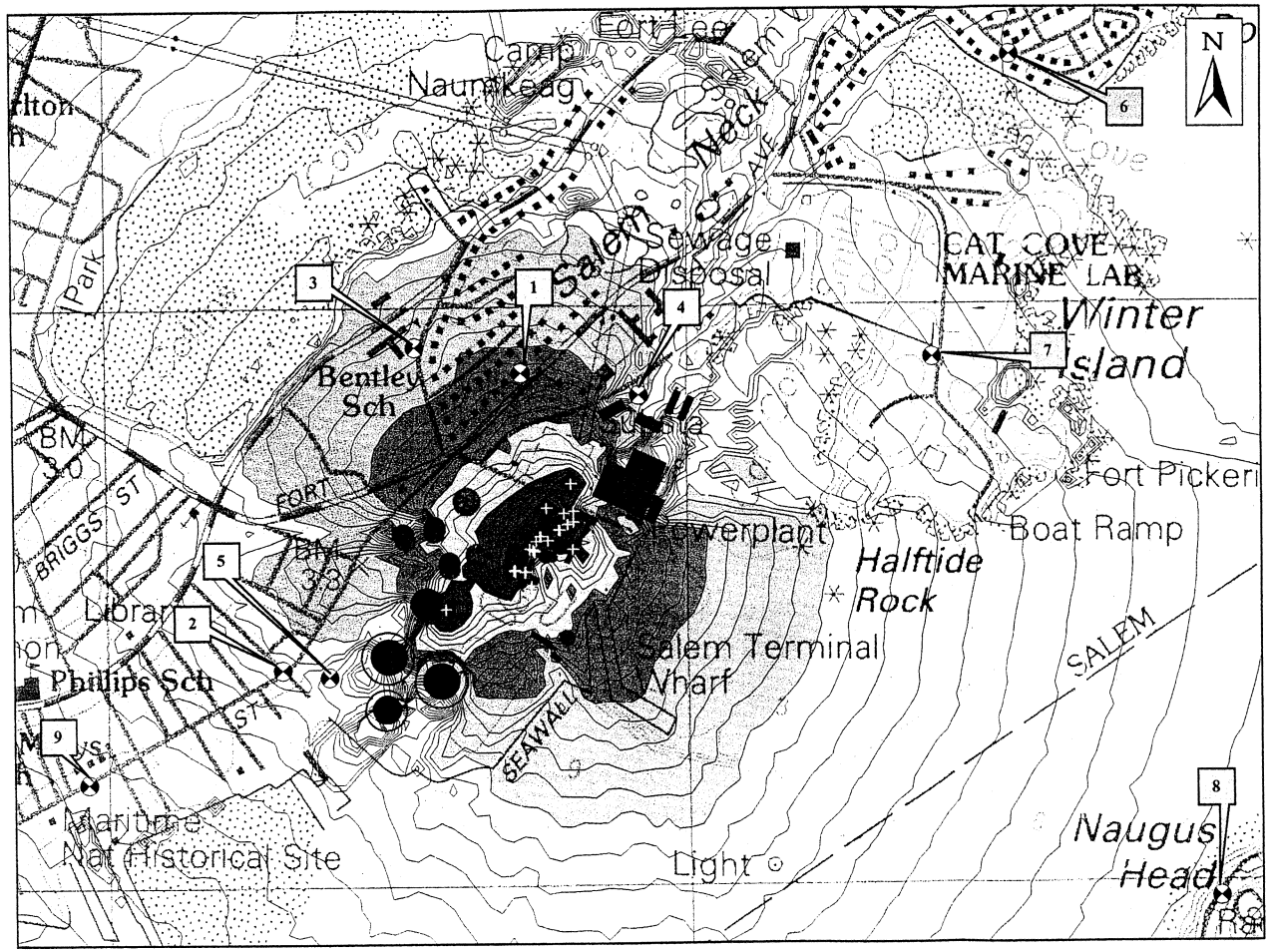
The final noise modeling results for all locations, reflecting the noise mitigation measures required to achieve the design goals, are provided in Table 6. Also presented in the table are the measured late night baseline L_{90} sound levels, and projected increases at each location. The following noise mitigation measures were included in the analysis for modeling purposes to achieve the design goals of the Project. These include the following:

- 20 dBA (nominal) booster fan discharge silencers
- Enclosures on numerous fans, blowers and pumps

Table 6. Sound Modeling Results Summary (dBA)

Location	December 2000 Measured Late Night L_{90}	Calculated Project Level	Cumulative Future Noise Level	Increase Over Baseline	DEP Standard for Increase over Baseline
Fort Avenue (NW of power block)	48	46	50	2	10
Fort Avenue / Derby Street (West of power block)	39	39	42	3	10
Bentley Elementary School	45	43	47	2	10
Bayview Avenue	40	30	40	0	10
Winter Island Park	45	34	45	0	10
Naugus Avenue	47	31	47	0	10
Orange Street / Derby Street	40	34	41	1	10

A noise contour map created using the CadnaA model is also presented as Figure 5. A review of the data in Table 6 reveals that, after proposed mitigation, calculated sound levels anticipated from operation of the new air emission control equipment, when added to existing



Location	Overall dBA
1. Fort Avenue	46
2. Fort/Derby	39
3. Bentley Elementary	43
4. South Essex Sewerage Property Line	42
5. Tank Farm	37
6. Bayview Avenue	30
7. Winter Island Park	34
8. Nagaus Avenue	31
9. Orange/Derby	34

Legend		
Point Source	> -99.0 dB	> 60.0 dB
Building	> 35.0 dB	> 65.0 dB
Cylinder	> 40.0 dB	> 70.0 dB
Barrier	> 45.0 dB	> 75.0 dB
	> 50.0 dB	> 80.0 dB
	> 55.0 dB	> 85.0 dB

Notes:

1. Elevation Contours based on USGS Salem Massachusetts 7.5x15 minute Quadrangle, 42070-E7-TM-025, 1985.
2. Receiver height is 3.05 meters.

TRC

Salem Harbor Station

Figure 5. Sound Contour Map

Cadna File Name: Salem 2.cna

late night baseline sound levels, would result in increases in noise of 3 dBA or less at all locations. Increases of 3 dBA or less are considered to essentially be imperceptible (FHWA, 1995) and are consistent with the Project objective for maintaining essentially imperceptible increases in noise. Using the impact criteria discussed previously, no significant adverse noise impacts would be expected due to operation of the Project.

2.5.4 Compliance with Standards

The calculated increases presented above reveal that these increases would be well below the DEP noise standard which allows for a 10 dBA increase over baseline noise levels. Accordingly, project noise levels would be in compliance with the DEP noise standard. As stated previously, the Project's goal is to be 3 dBA or less above existing ambient levels.

2.5.5 Construction Noise

Typical Sound Levels

The construction process for this Project will include the following phases:

- Excavation
- Foundations
- Erection
- Restoration/Finishing

Construction equipment utilized differs in each phase of construction. In general, heavy equipment (bulldozers, loaders, dump trucks) use and any blasting that might occur would be during the excavation phase. Noise is generated during construction primarily from diesel engines that power the equipment. Exhaust noise is usually the predominant source of diesel engine noise.

Sound levels of construction equipment likely to be used for the Project are summarized in Table 7 (BBN, 1971). The range of typical site average sound levels for each phase of construction are presented in Table 8 (BBN, 1971). Sound levels in both tables are presented for a reference distance of 1000 feet.

Table 7. Sound Levels of Major Construction Equipment

Equipment Type	Sound Level at 1000 Feet (dBA)
Cement Trucks	65
Front Loaders	53
Graders	59
Bulldozers	54
Pickup Trucks	34
Backhoes	59
Concrete Mixers	59
Pile Drivers	78

Source (BBN, 1971; NYSDEC, 1974; NYPA, 1986)

Table 8. Typical Range of Site Average Sound Levels By Construction Activity (dBA) Minimum to Maximum Equipment Required at Site	
Construction Phase	**Sound Level at 1000 Feet (dBA)***
Excavation	45 to 63
Foundations	51
Erection	46 to 58
Restoration/Finishing	48 to 63

Source (BBN, 1971)

* No differences in average sound levels between minimum and maximum equipment.

The actual sound levels which will be experienced by residences in the area will be a function of distance from the site. In order to arrive at a quantitative level of average construction sound levels at each residential receptor reviewed in this analysis, the approximate distances from each location to the center of the site was used to calculate the expected reductions in sound with distance. These levels are presented in Table 9 and are compared to the existing daytime L_{eq} levels. The daytime L_{eq} levels were used for comparison purposes because construction is expected to occur during the day and the L_{eq} represents a measure of all the sounds present. Construction sound , which is variable, is more closely represented by the L_{eq}.

2.5.6 Construction Noise Impacts

Consistent with the City of Salem's regulation of noise, potentially noisy construction activities will be restricted to daytime hours and to weekdays.

The data presented in Table 9 represent existing ambient and calculated construction sound levels. The addition of two sound levels is conducted logarithmically, not arithmetically. That is, two 50 dBA sound levels do not add to 100 dBA. Rather, because of the logarithmic nature of sound levels, two 50 dBA sounds add to 53 dBA. As an example, for the Bayview Avenue location, with an ambient level of 50 dBA, the addition of the 51 dBA excavation noise would result in a future level of 54 dBA, while the addition of the 33 dBA level to an ambient of 50 dBA would result in a future level of 50 dBA (no increase).

As reflected in Table 9, sound transmitted from the site will be attenuated by distance. Other attenuation factors, such as atmospheric absorption and intervening buildings and topography that will act as barriers will further reduce sound levels away from the construction site.

The calculated construction sound levels (except for pile driving) are shown to be near, to well below existing ambient daytime levels at all locations. Construction sound levels to an outdoor receptor at a few of the more proximate locations could exceed ambient levels at times when certain equipment is in operation. The short-term nature and small expected magnitude of the potential construction noise impacts indicate that no adverse, long term impacts would be anticipated. For pile driving, short-term impacts would be expected.

The Emissions Control Project will require installation of pile supports. The method for installing the piles (auger or driven) and time required will depend on the nature of conditions encountered during construction. Calculated pile driver sound levels for driven piles would be above existing ambient levels. Pile driving would be limited to weekday daytime hours. USGenNE will explore noise mitigation measures during pile driving events.

It is important to note that all of the equipment presented is not used in each phase of construction. Further, equipment used is not generally operated continuously, nor is all of the equipment always operated simultaneously.

The construction sound levels presented here are those that would be experienced by people outdoors. A building (house) will provide significant attenuation for those who are indoors. Sound levels can be expected to be up to 27 dBA lower indoors with the windows closed. Even in homes with the windows open, indoor sound levels can be reduced by up to 17 dBA (USEPA, 1978). Construction noise will also be temporary in nature.

Considering the calculated range of construction noise levels and existing ambient noise levels, it is anticipated that limiting construction activities to daytime, weekday hours will be an effective means of minimizing potential impacts due to construction noise. As such, no significantly adverse or long-term noise impacts from construction noise are anticipated. In addition to limiting construction hours, functional mufflers will be maintained on construction equipment as a general good construction practice to reduce construction noise to the extent practical.

2.6 Local Flora and Fauna

As noted in the Project description, the Project is located in a previously disturbed, active industrial site that is entirely covered with structures, bituminous pavement and or gravel (with the exception of the vacant area on the southwest side of the site that is proposed to be used as an area for construction parking). Accordingly, the Project will not affect any land-based ecosystems such as indigenous wildlife, stream bank cover and vegetated or wooded growth. USGenNE confirmed with the U.S. Fish and Wildlife Service that there are no federally listed and proposed endangered or threatened species that are known to occur on the Project site (Appendix D). (In addition, the site is not listed in the Massachusetts Natural Heritage Atlas (2001 to 2002 edition) as containing estimated habitats of rare wildlife, certified vernal pools, and priority habitats of rare species. No significant adverse effects are anticipated on flora or fauna.

Table 9. Average Range of Construction Sound Levels Anticipated by Phase (dBA)							
	December 2000 Existing Daytime L_{eq}	**Distance (feet)**	**Excavation**	**Foundations***	**Building Construction**	**Exterior Finishing and Cleanup**	**Pile Driving**
Fort Avenue (NW of power block)	64	1200	43 to 61	49	44 to 56	46 to 61	76
Fort Avenue / Derby Street (West of power block)	49	1500	41 to 59	47	42 to 54	44 to 59	74
Bentley Elementary School	49	1300	43 to 61	49	44 to 56	46 to 61	76
Bayview Avenue	50	3800	33 to 51	39	34 to 46	36 to 51	66
Winter Island Park	66	2400	37 to 55	43	38 to 50	40 to 55	70
Naugus Avenue	54	4100	33 to 51	39	34 to 46	36 to 51	66
Orange Street / Derby Street	64	2700	36 to 54	42	37 to 49	39 to 54	69

* No differences in average sound levels between minimum and maximum equipment.

3.0 MAN-MADE ENVIRONMENT

3.1 Land Use

3.1.1 Project Site

The Project site is located on a peninsula between Beverly Harbor and Salem Harbor. It is presently used for the generation and transmission of electrical power. After the completion of the Project, the site will continue to be used to generate and transmit electricity.

The Project's permanent equipment and structures will occupy an area of approximately 2 acres. The area for the permanent equipment and structures is currently occupied by 2 oil storage tanks and related earthen berms; inactive and cleaned wastewater basins and miscellaneous equipment and structures. The tanks and miscellaneous structures will be removed or relocated. The earthen berms will be removed and the wastewater basins will be filled with suitable material from off and/or on-site. The emissions control equipment area when completed will include structures, paved areas and rock surfaced areas.

3.1.2 Adjacent Land Use

Adjacent land uses have been divided into four quadrants; northeast, southeast, northwest and southwest. Adjacent land uses within each quadrant are as follows.

Northeast

The SESD Facility is located adjacent to the Project site in the north/northeasterly direction. Further north are Fort Lee, Camp Naumkeag, the Salem Willows Park, a residential area and the Salem/Beverly Harbors. Also northeast of the Project site is Winter Island and the Fort Pickering Lighthouse.

Southeast

Salem Harbor borders the site to the south and east. Heading in the east and southeasterly directions, across the Salem Harbor, is the Town of Marblehead.

Northwest

Fort Avenue borders the Project site to the north and west. Northwest of Fort Avenue and Derby Street is the Bentley School and a residential area. Further northwest is Collins Cove.

Southwest

Salem Harbor borders the site to the south. Immediately south of the Project is Hawthorne Cove Marina. Further south/southwest of the Project site is the Maritime National Historic Site, Derby Wharf and the Derby Wharf lighthouse, and a residential area west of Derby Street. Further

south are Long, Palmer and Pickering Points. West of the Project site and Derby Street is the downtown portion of the City of Salem.

3.1.3 Compatibility with Plans of the City of Salem

The Salem Harbor Plan dated May 2000 (the Plan) was completed to establish a regulatory approach to those lands and waters subject to Commonwealth jurisdiction. The Harbor Plan defines the Harbor Planning Area as:

> The Harbor Planning Area encompasses the Salem shoreline and adjacent landside areas extending from Winter Island to the area around the South River and the water's edge of Shetland Mills and Palmer Cove. The landslide boundary is defined by the roadway closest to the waterfront, which for the most of the planning area is Derby Street and Fort Avenue.

The Harbor Planning Area is divided into five sub-areas. The Project site is located in sub-area four, Industrial Port and is a state Designated Port Area. The Industrial Port area covers approximately 78 acres and encompasses the existing USGenNE Salem Harbor Generating Station (Project site) and the South Essex Sewerage District Treatment Plant.

The Project is consistent with the Salem Harbor Plan. The Project is limited to the existing USGenNE Salem Harbor Generating Station site. The use of the property for electrical generation purposes is compatible and consistent with the historic utility use of the property. The Project will have no significant negative impacts on surrounding land uses and will reduce the facility's air emissions.

3.2 Density

The footprint of the completed Project is approximately 2 acres. This is roughly 3 percent of the 65-acre site. No additional parking is proposed as the existing parking area is sufficient.

3.3 Architecture and Visual Impacts

The architecture of the Project will be industrial in nature and will be visually consistent with the Facility's adjacent generating equipment and structures. The height of the tallest structure associated with the Emissions Control Project will be at the height of the existing power plant building, which is less than 200 feet. The heights of the two taller existing stacks are over 400 feet and 500 feet, respectively. No new stacks will be built for the Project.

Construction material will be a structural steel grid, which will support large vessels, tanks, ductwork and other equipment. Most of the vessels, tanks, and ductwork will be insulated and protected with aluminum lagging painted to match the existing structures. Other ground supported steel enclosures will house equipment such as fans, pumps, blowers and electrical equipment.

The Emissions Control Project will be both similar in height to the existing Facility, and constructed of similar materials, so that visual contrast will be minimized. To help show the

extent of visual impacts, USGenNE is preparing photographic simulations from several viewpoints. The photographic simulations will be available at the public hearings for the Project. In all instances where the Project is visible, including, recreational areas, open spaces and natural and scenic areas, the Emissions Control Project will appear along with the existing Facility structures.

With respect to minimization of visual impacts, USGenNE will use similar materials to those of the existing Facility to help minimize contrast in views of the new structures. The existing landscape (trees, shrubs and earthen berm) along Derby Street and Fort Avenue screens views of the existing Facility and will also screen views of the emissions control equipment.

Lighting for the Project will be designed to have a minimal impact on the surrounding community while providing for safe operations. Project lighting will be similar to the existing lighting fixtures used at the Facility. All lighting will be shielded so as to provide downward directivity for worker safety and avoid nighttime glare.

3.4 Zoning

The site, totaling approximately 65 acres, is located within the Industrial District pursuant to the City of Salem Zoning Map. Adjacent zones to the site include R-C Residential-Conservation, R-1 One-Family Residential District, R-2 Two-Family Residential District, and B-1 Neighborhood Business District.

3.5 Historic Buildings, Historical Sites and Archeological Resources

3.5.1 Existing Conditions and Potential Project Impacts

Due to the highly disturbed nature of the site, (most of which is filled tideland) there does not appear to be any potential for the presence of significant archaeological resources at the site. Therefore, no significant impacts to archaeological resources are expected from construction of the Emissions Control Project. Similarly, no historic resources listed on the NRHP, state register or local register are located on the Project site. Although the Project may be seen from several registered historical and archeological sites or districts, the view from these locations will not change significantly, as the existing viewsheds are already influenced by the view of the similarly-sized and larger structures at the existing Facility. Thus, the Project will not change the character of the area or have a significant impact on these resources.

3.5.2 Conclusion

The Project site has no identified historic or archaeological resources. No significantly adverse impacts to known historic buildings, structures, sites, districts or archaeological resources would result from either the construction or operation of the Project. Communication with the Massachusetts Historical Commission (MHC) on this topic is ongoing. Communication with the MHC to date is located in Appendix E.

4.0 PUBLIC FACILITIES

4.1 Water Supply

To support the proposed emissions reduction equipment, additional process makeup requirements at the site are expected to approach 600,000 gallons per day, the bulk of which is expected to be satisfied through reuse of treated effluent from the SESD Facility. Prior to use at the station, the makeup water would be filtered, chlorinated and directed to a newly constructed filtered water storage tank. No new interconnections to the municipal distribution are anticipated.

Currently, process makeup water for the Facility is obtained from the City's municipal distribution system. The Station uses an average of approximately 470,000 gallons per day (gpd) with an annual variation of (+/- 15%) of water to support electric generating activities (i.e., demineralized water for steam production, air emissions control, equipment cleaning, fire fighting, etc.) and potable water uses. The Project will require on average an additional 36,000 gpd from the city system for the emissions control equipment. This is a 7.7% increase above the average existing water usage. This increase above average is considered minor because it is well within the variability of the existing usage. Service and potable water is supplied to the site through interconnections supplied by a 16-inch water main located along Fort Avenue. Each interconnection is equipped with a backflow prevention device.

The additional water will be required for:

- On-site hydration of urea pellets (*i.e.,* production of urea solution as feed stock for the urea to ammonia system serving Units 1, 2, and 3 and the Unit 4 SNCR injection system);
- Maintenance/service water for the newly installed emission abatement equipment areas; and
- Makeup water for the dry FGD system used to reduce SO_2 emissions for Units 1, 2, and 3.

Table 10. Projected Process Makeup Requirements to Support Emissions Reduction Equipment at Salem Harbor [1]

Process	Units	Projected Makeup Requirement	Water Source
SCR urea to ammonia makeup and SNCR urea processing makeup	Units 1, 2, 3 and 4	5 gpm (demineralized)	Existing demineralized water storage tank
Dry FGD makeup water	Units 1, 2, and 3	400 gpm	Reuse of secondary treated effluent from SESD Facility
Maintenance/service water	Emissions control equipment areas/units	Up to 10 gpm	Plant service water system

[1] Water use projections are based on preliminary design estimates and are subject to revision during final design. The above estimates are considered reasonable to within +/- 25%.

4.1.1 Fire Protection

The existing fire protection loop for the Station complies with applicable guidelines established by the National Fire Protection Association (NFPA) and all applicable local codes and regulations. The water supply for the fire protection system is taken off of the existing water mains serving the site. Installation of the new emission control equipment will involve relocation of a limited amount of existing fire water supply equipment as well as installation of new supply equipment. Where appropriate, provision for use of foam and/or fire extinguishers will be included.

4.2 Sanitary Sewerage Connection

Sanitary wastewater generated at the Facility is currently collected for treatment at the SESD Facility. The average daily sanitary wastewater generation rate is approximately 5,000 gallons per day. With the Project, return flows to the SESD Facility are expected to increase to include returns from reuse of treated SESD Facility effluent in the air emission control system and related activities. These returns would be in accordance with terms mutually agreed upon by USGenNE and SESD, and would involve only connections between the two adjoining properties.

4.3 Hazardous Waste

Spent activated carbon from the ARP baghouse will contain some mercury. In addition, limited volumes of federal and state-regulated hazardous wastes (such as oily wastes) might be generated as a result of equipment oil changes or other onsite activity. All of these wastes will be managed in accordance with the applicable Resource Conservation and Recovery Act (RCRA) regulations. The contractors will work closely with the on-site USGenNE Environmental Manager and Licensed Site Professional (LSP) on waste management issues. In addition, in areas of the active MCP sites, contaminated soils might be generated that will require separate soil management and disposal. If contaminated soil or groundwater is encountered during construction of the Project, the contractor will work closely with the on-site Environmental Manager and Licensed Site Professional to properly manage the wastes, and release abatement measure (RAM) reports will be prepared as necessary. Contractors will be given a Soil and Groundwater Management Plan, which will outline proper soil and groundwater management guidelines.

4.4 Traffic Facilities

The Emissions Control Project will generate worker and truck traffic during construction and operation. Access to the Project site during plant operation will be provided via the existing Facility entrance located on Fort Avenue. During Project construction, additional access will be provided by the Webb Street gate. The following sections discuss operation and construction traffic.

4.4.1 Traffic Flow Patterns During Plant Operation

The Facility currently accepts approximately 28 to 38 truck deliveries and pick-ups per day. The range of truck traffic depends on Station dispatch and the variability of fuel properties. When

the Emissions Control Project is in service, there will be an increase of approximately 15 truck delivery/pickups per day. During operation, the Facility will have truck deliveries and pickups for various purposes such as lime and urea delivery, removal of spent reagent, and removal of processed fly ash (pozzolan).

Once the Emissions Control Project has been implemented, there will be truck deliveries and pickups throughout the year to the Facility for various purposes. Table 11 outlines the type of delivery or pickup, type of truck and estimated number of trucks during full load operation.

Table 11. Truck Deliveries and Pick-Ups During Operation

Type of delivery or pickup	Current Estimated Number of Trucks	Estimated Number of Trucks with Emissions Control Equipment
FGD spent reagent removal	0 trucks/day	18.6 trucks/day
Lime (FGD reagent)	0 trucks/day	6.8 trucks/day
Dry urea for ammonia for U1/2/3 SCR and for urea solution for U4 SNCR	0 trucks/day	1.8 trucks/day
ARP system processed ash (pozzolan)	0 trucks/day	16.2 trucks/day
Activated carbon	0 trucks/day	0.03 truck/day
Bottom Ash	1 trucks/day	0.2 truck/ day
Precipitator Fly Ash	**25 trucks/day**	0 trucks/day
Liquid Urea for Units 1, 2, and 3 SNCR	1.5 trucks/day	0 trucks/day
Stores Delivery	10 trucks/day	10 trucks/day
Total	**38 trucks/day**	**54 trucks/day**

Estimated number of trucks per day is based on an average 5 day work week.

Trucks arriving at the site will most likely travel along Routes 128, 1A, 107 or 114. Existing truck route restrictions will be maintained.

4.4.2 Traffic Flow Patterns During Construction

During construction of the Project, two categories of vehicular trips will encompass the construction activity: worker trips and equipment/supply deliveries. The first category, worker trips, are construction workers traveling to and from the job site. The maximum projected peak number of construction workers employed at any one time is approximately 150. Construction is anticipated to be completed within an 18-24-month timeframe and during much of that period, construction traffic volumes will be significantly less then during the peak period. It is anticipated that construction workers traveling to the site will utilize Routes 128, 1A, 107, and/ or 114. USGenNE will coordinate construction traffic management with the Salem Police Department.

Construction activities will occur over the course of one shift occurring during the hours of 8:00 AM to 5:00 PM, Monday through Saturday. A construction traffic management plan for the Project is being developed in consultation with the City of Salem. A copy will be provided to the City during the public hearing. At the same time, copies will be filed with the DTE.

Deliveries of large equipment and ductwork are planned to be by barge at the north bulkhead near the coal wharf with offloading using a land based crane. Other materials such as concrete, reinforcing steel, structural steel, electrical equipment, conduit, pipe, valves, controls, and other materials will be delivered by truck. The average number of truck deliveries is estimated at 5/day. The peak number of trucks is expected during foundation construction where a maximum 50 trucks/day is estimated. It should be noted that the basins will be filled as part of a release abatement measure (RAM) prior to project construction.

Construction traffic routes for construction workers and trucks will be enforced during the construction phase of the Project. The following routes have been identified in order to minimize impacts on the local roadway network.

Approaching the Site:

Construction workers and trucks will access the Project site via Bridge Street to Webb Street, bearing right at the fork onto "lower" Webb Street. All construction worker traffic and truck traffic will enter the Facility via Webb Street through USGenNE's "Webb Street Gate" (where Webb Street meets Derby Street). This route is the same route that is currently used by cars and trucks except that vehicles will travel on the lower end of Webb Street and enter the Webb Street Gate rather than entering at the main gate at Fort Avenue. The "Fort Avenue Gate" is currently used for all traffic, but does not provide direct access to the construction site. The Webb Street Gate was selected to provide quicker and more direct access to the Project site. This allows trucks and construction workers to safely access the Project site, which is located directly east of the Webb Street Gate.

Exiting the Site: (Replace with City EIS language)

Construction workers and trucks leaving the Facility will exit through the Webb Street Gate and follow Webb Street to Bridge Street.

4.4.3 Parking

Parking at Salem Harbor during operation will not change. All construction parking will be on-site, located at the southwestern area of the site, which will be surfaced with compacted gravel. After construction is completed, the construction parking area will be restored. No construction vehicles will be permitted to park on any public streets.

4.4.4 Pedestrian Patterns

There will be no changes to the existing pedestrian circulation pattern within the vicinity of the Facility site.

4.5 Electric Power

As stated previously in Section 2.4, the Project will require an additional 12 megawatts (MW) of power above the Facility's existing requirements. After completion of the Project, station service will continue to be supplied by the Station..

4.6 Natural Gas

The Project is designed to achieve compliance with the 7.29 Regulations with the existing units continuing to burn coal and No. 6 oil. One aspect of the emissions control technology specified in the ACO requires the use of natural gas for reheating flue gas for proper operation of the Selective Catalytic Reduction equipment. It will require 150 MMBtu/hr of gas for startups and 105 MMBtu/hr of gas for steady operations. Gas for the Project will be used for reheating flue gas for proper operation of the Selective Catalytic Reactor.

USGenNE anticipates that this natural gas will be delivered to the site by the local gas distribution company, KeySpan, by extending its existing distribution main in Fort Avenue to the Project. KeySpan will obtain all permits necessary for street opening and construction of the extension and for the gas metering equipment. The natural gas line extension will run underground to the new gas metering station located on the Facility site. From the gas metering station, the natural gas line will run mostly underground on the Facility property, approximately 700 feet to the Project.

5.0 COMMUNITY SERVICES

5.1 Police

To manage construction traffic, the Project will coordinate with the City of Salem Police Department on traffic control. No impacts on the Police Department are anticipated during operations.

5.2 Fire

The Station is already protected by a firewater hydrant system from the City of Salem's water mains. This system will supply hydrants around the new equipment and hose standpipes within the new facility. The Project will require the construction of a water treatment building and an electrical equipment building. The new building will house the control rooms, electrical equipment and wash room facilities.

In addition there will be enclosures for several pieces of equipment including: the Booster Fan, Lime Reagent Preparation equipment, Urea to Ammonia equipment, ARP equipment, pozzolan load out and silo truck load out area, fabric filter hopper area and penthouse, SCR and Gas-to-Gas Heat Exchanger and Duct Burner, FGD Spray Dry Absorber base and penthouse, Spent Reagent Blowers and electrical equipment, ARP Ash Blowers and electrical equipment, Silo top equipment, and miscellaneous equipment.

The building and equipment enclosures will be metal-framed buildings with insulated metal cladding. Floors will be constructed of metal grating or concrete as appropriate for the service.

5.3 Public Works

The Project will not result in additional public roadway. The existing access roadways will not be impacted or altered by the Project. Additionally, street drains, culverts, sanitary sewers, and waterlines will not be impacted or affected by the Project.

6.0 HUMAN CONSIDERATIONS

6.1 Aesthetics and Visual Impact

See Section 3.3 of this document.

6.2 Parks, Forests, and Recreational Areas

Construction of the Project will not significantly affect existing or potential park and recreational areas, open spaces, natural areas and scenic values. Construction of the Emissions Control Project will take place within the existing Facility site boundaries. The Project will not significantly affect recreational opportunities in the area, as there will be no removal of parks, forests, or open areas for public use. As stated in the Salem Harbor Plan, the existing USGenNE Salem Harbor Generating Station is recognized as, "a key feature, both on the harbor and in the city's overall economy."

APPENDIX A

ADMINISTRATIVE CONSENT ORDER

In the Matter of USGen New England, Inc. Salem Harbor Station	ADMINISTRATIVE CONSENT ORDER Order # ACO- NE-03-7001 Docket Nos. 2002-114 and 2003-017 File No. W025160

I. The Parties

A. The Department of Environmental Protection (the "Department") is a duly constituted agency of the Commonwealth of Massachusetts pursuant to M.G.L. c.21A, section 7, with a principal office at One Winter Street, Boston, Massachusetts 02108. The Department implements 310 CMR 7.29 (the "7.29 Regulations") Emissions Standards for Power Plants, a regulation to which Salem Harbor Station is subject.

B. USGen New England, Inc. ("USGenNE") owns and operates the electric power generating station located in Salem, Massachusetts, known as Salem Harbor Station ("Salem Harbor" or the "Facility").

C. Approximately 55 citizens intervened in the captioned dockets. Those citizens include the Conservation Law Foundation ("CLF"), Clean Water Action, HealthLink, Inc., the Massachusetts Public Interest Research Group ("MASSPIRG"), and the Wenham Lake Watershed Association, and members of those organizations; said citizens group is represented in the above-referenced dockets by CLF.

D. The City of Salem (the "City") is a public instrumentality and municipality. The City is the host community of Salem Harbor and an intervenor in Docket No. 2003-017.

II. Statement of Law and Facts

A. The Department adopted 310 CMR 7.29 in May 2001, which requires Salem Harbor to submit an Emission Control Plan ("ECP") application by January 1, 2002.

B. USGenNE submitted such ECP application in December 2001.

C. The Department issued a proposed ECP Approval of USGenNE's application, but disagreed that the ECP demonstrated that Salem Harbor Station was eligible to meet the 310 CMR 7.29 emissions standards by October 2006. The Department's Proposed ECP Approval contained an October 1, 2004 compliance date.

D. USGenNE submitted a letter to the Department seeking to amend its ECP application for Salem Harbor during the public comment period on the Department's proposed ECP Approval.

E. The Department declined to amend the ECP application during the public comment process, and issued a final ECP Approval on June 7, 2002, with an October 1, 2004 compliance date.

F. USGenNE appealed to the Office of Administrative Appeals the final ECP Approval and the Department's refusal to amend its application. This is the basis for Docket No. 2002-114. The parties referenced in Section I.C. above were granted status as intervenors in that matter.

G. In late June 2002 USGenNE submitted an application to amend its ECP Approval ("Amended ECP"), pursuant to 310 CMR 7.29(6)(h).

H. On December 13, 2002, the Department issued a draft Approval of the Amended ECP, with an October 1, 2006 compliance date.

I. In February 2003, the Department denied USGenNE's application to amend its final ECP Approval for Salem Harbor.

J. USGenNE subsequently appealed that decision to the Office of Administrative Appeals. This is the basis for Docket No. 2003-017. The parties referenced in Section I.C. and the City were granted status as intervenors in that matter.

K. The length of time Salem Harbor must continue to operate to ensure reliable electric service on the North Shore and in the Greater Boston area is uncertain.

L. USGenNE filed under the procedures set forth in Section 18.4 of the Restated NEPOOL Agreement on April 25, 2003, a request with the Independent System Operator of New England ("ISO") to cease operating the facility on or before October 1, 2004.

M. The ISO has not issued a Determination whether Salem Harbor must continue to operate and, if so, for what duration and at what capacity.

N. Such Determination is expected to be issued on or about July 25, 2003.

O. USGenNE has represented to the Parties that it does not have the ability to finance the capital improvements it has proposed to achieve compliance with the 7.29 Regulations, and that, as a result, such funding must be provided by public sources unaffiliated with USGenNE.

P. On May 14, 2003, the Massachusetts Department of Telecommunications and Energy issued an Order Opening Inquiry (the "DTE Order") "to assess the reliability of the energy supply in the North Shore area over the next two to six years in consideration of USGenNE's 18.4 Application and to inform and position the Department to protect ratepayer interests as this matter develops . . ." DTE Order at 3.

Q. In light of the foregoing, it is in the public interest to implement the 7.29 Regulations at Salem Harbor in a manner that achieves significant air emission reductions as expeditiously as possible, but that takes into account the need for reliable electricity supplies, the financial uncertainties surrounding USGenNE, the fiscal uncertainties of the City, and the economic risks to the workers at the facility.

R. It is also in the public interest that necessary permits and regulatory approvals be processed as expeditiously as possible, consistent with the opportunities for public participation provided in the applicable statutes and regulations.

S. The parties to this ACO, therefore, are seeking to provide a compliance framework and schedule to facilitate future decision-making regarding the continued operation of the Salem Harbor facility.

III. Definitions

A. ACO Permit: A permit or other governmental authorization required to implement this ACO.

B. ACO Permitting Authority: Any governmental entity that issues an ACO Permit.

C. Burner Tip Optimization Program: A NO_x reduction program applicable to Salem Harbor Unit 4. The first phase of the program consists of tuning the existing burner tips in order to maximize NO_x reduction. The second phase of the program is to design, have manufactured, install, and test a

new design of burner tip that may further reduce NO_x. The overall program is designed to achieve a NO_x reduction of up to 10% while maintaining boiler reliability.

D. Compliance Account: As set forth in Section IV.B.3.a.

E. Compliance Equipment: The equipment proposed to be installed on one or more Reliability Units by the selected vendor, consistent with Exhibit D of this ACO, to achieve compliance with the NO_x, SO_2 and mercury requirements of the 7.29 Regulations on Units 1, 2, and 3 including but not limited to Selective Catalytic Reactors, Dry Flue Gas Desulfurization Devices, Fabric Filters, and associated corollary equipment and structures; the equipment proposed to be installed on Unit 4, consistent with Exhibit D of this ACO, to achieve compliance, including but not limited to a Selective Non-Catalytic Reduction System; a windscreen for the coal pile; carbon injection equipment; a process to recycle flyash; and activities necessary to allow the installation of such equipment such as tank removals and on-site demolition, excavation, filling, grading and other site preparation activities; and any other mitigation or other requirements imposed on USGenNE in connection with the construction and installation of the Compliance Equipment excluding the near term compliance measures in IV.A. below except to the extent such measures expressly are conditioned in Section IV.A., below, on the availability of Compliance Equipment Funding.

F. Compliance Equipment Funding: Funds made available to pay for the Compliance Equipment.

G. Compliance Equipment Funding Date: The date on which sufficient Compliance Equipment Funding is placed in escrow or otherwise made available such that a binding agreement with a qualified engineering, construction and procurement company or companies may be executed and a notice to proceed under such agreement may be issued.

H. Determination: Notification by the Independent System Operator of New England ("ISO") pursuant to Section 18.4 of the Restated NEPOOL Agreement that a proposed action, such as retirement of a generating unit, will have a significant adverse effect upon the reliability or operating characteristics of the electric system in all or part of New England.

I. Early Reduction Credits of NO_x: Tons of emissions reductions of nitrogen oxides at Salem Harbor which would otherwise be eligible for certification as Emission Reduction Credits pursuant to 310 CMR 7.00: Appendix B(3) (the Massachusetts Emission Reduction Credit Banking and Trading program), but excluding emissions reductions attributable to implementation of the near term compliance measures required in Section IV.A.2 and 3 of this ACO and excluding reductions achieved prior to the Effective Date of this ACO.

J. Early Reduction Credits for SO_2: Tons of SO_2 emitted at Salem Harbor that are (i) below historical actual emissions (as that term is defined in 310 CMR 7.29(2)) and (ii) which are made between May 11, 2001 and October 1, 2005 (for Phase 1) and October 1, 2007 (for Phase 2), all as calculated using the methodology in 310 CMR 7.29(5)(b)2.

K. Effective Date of ACO: The date of the last signature set forth below.

L. Good Utility Practice: As defined in the Restated NEPOOL Agreement, Section 1.31: Good Utility Practice shall mean any of the practices, methods, and acts engaged in or approved by a significant portion of the electric utility industry during the relevant time period, or any of the practices, methods, and acts which, in the exercise of reasonable judgement [sic] in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety and expedition. Good Utility Practice is not limited to a single, optimum practice method or act to the exclusion of others, but rather is intended to include acceptable practices, methods, or acts generally accepted in the region.

M. Non-Reliability Unit: Any unit at Salem Harbor that has received an approval to cease operations under the procedures of Section 18.4 of the Restated NEPOOL Agreement.

N. NO_x Allowance: (i) An Allowance, as that term is defined in 310 CMR 7.28(2) and used in 310 CMR 7.28 or (ii) any other authorization by the United States Environmental Protection Agency or Massachusetts Department of Environmental Protection initially allocated to Salem Harbor to emit up to one ton of nitrogen oxides, including but not necessarily limited to NO_x Allowances, as that term is defined in 40 CFR 96.2 and 40 CFR 97.2.

O. Offsets of SO_2 or NO_x: Tons of SO_2 or NO_x that exceed the number of tons of emissions reductions at Salem Harbor required by the applicable emissions standards of Phase 1 and Phase 2 respectively, of 310 CMR 7.29, after the applicable compliance dates of those standards as contained in this ACO.

P. Phase 1: The emissions reductions required by 310 CMR 7.29(5)(a)1.a. (for NO_x) and 310 CMR 7.29(5)(a)2.a. (for SO_2).

Q. Phase 2: The emissions reductions required by 310 CMR 7.29(5)(a)1.b. (for NO_x) and 310 CMR 7.29(5)(a)2.b. (for SO_2).

R. Reliability Unit: Any unit at Salem Harbor that is not a Non-Reliability Unit.

S. SO_2 Allowance: An authorization by the Administrator of the United States Environmental Protection Agency (or his or her designee) under the federal Acid Rain Program (as that term is defined in 40 CFR 72.2) to emit up to one ton of sulfur dioxide during or after a specified calendar year, or any comparable authorization to emit up to one ton of sulfur dioxide under any other program adopted or implemented by the Commonwealth of Massachusetts or any other state.

IV. Disposition and Order

In the interest of protecting the environment and avoiding the time and expense of protracted litigation, the signatories to this ACO hereby agree that the above-cited administrative appeals will be resolved with the following provisions, and that the terms and conditions of this ACO shall be binding upon the Parties' respective successors and assigns. The Parties understand and hereby waive whatever rights they have to further administrative review before the Department, as well as an appeal to Court, provided this ACO is accepted as a settlement of the above-cited administrative appeals.

A. Near Term Compliance Measures: For all Units at Salem Harbor, USGenNE shall undertake the following near term compliance measures.

1. Immediate SO_2 Reductions from Unit 4.

   Beginning after consumption of existing fuel oil inventories currently stored at Salem Harbor, Unit 4 shall combust No. 6 oil with an average sulfur content of not greater than 0.3% through December 31, 2003. As of January 1, 2004, USGenNE shall cause Unit 4 to achieve early compliance with the SO_2 emission requirements of the 7.29 regulations by emitting not more that 6 lbs/MWH on a rolling twelve-month average basis.

2. Immediate NO_x Reductions from Units 1, 2 and 3.

   USGenNE shall reduce NO_x emissions from Units 1, 2 and 3 by operating its existing SNCR equipment, consistent with other applicable regulations, on a year round basis in the same manner as it is currently operated during the ozone season until such time Salem Harbor achieves full compliance with the 7.29 Regulations.

3. Immediate NO_x Reductions from Unit 4.

USGenNE will immediately commence a Burner Tip Optimization Program to reduce NO_x emissions from Unit 4. The Program shall be completed by October 31, 2003.

4. Acceleration of Permitting of SNCR for Unit 4.

Within 30 days of the Effective Date of this ACO, USGenNE shall submit a Plan Approval application pursuant to 310 CMR 7.02 for the installation of SNCR equipment on Unit 4. Detailed engineering, procurement and installation of the SNCR equipment shall be commenced provided that with respect to the SNCR equipment on Unit 4 the Compliance Equipment Funding Date has occurred. Exhibit A of this ACO includes an illustrative milestone schedule for permitting and installing the SNCR equipment.

5. Immediate Improvements in Dust Mitigation Associated with Facility's Coal Pile

Within 30 days after the execution of this agreement USGenNE will file with the Department, with a copy to all Parties to this ACO, a schedule for implementing the measures requested by the Dust Committee deemed feasible by USGenNE. Notwithstanding the foregoing consultation process and timeframes, USGenNE shall implement not later than July 31, 2003 improvements in coal off-loading procedures, coal pile management procedures, water spray operation and maintenance procedures which shall be incorporated into the final list of measures filed with the Department. Such measures shall be developed in consultation with the joint USGenNE/neighborhood group in Salem known as the "Dust Committee." Such filing will be in the form of amendments to the existing SOMP for Salem Harbor. Within 30 days of receipt of the proposed amendments, DEP shall issue an approval, conditional approval or disapproval of the proposed amendments. USGenNE shall implement the approved amendments consistent with the schedule approved by the Department.

6. Anticipatory Activities Associated with Installation of Coal Pile Windscreen

USGenNE shall issue a Request for Proposals for the preliminary design and installation of a coal pile windscreen within 90 days after execution of this Agreement. The terms of that RFP should reflect close consultation with, and concerns expressed by, the Dust Committee. The purchase and installation of the windscreen is contingent on receipt of Compliance Equipment Funding. Upon selection of a preferred bidder, USGenNE shall present the bidder's preliminary design at the following Dust Committee meeting. Unless requested otherwise in writing by DEP or the City within 30 days of that presentation, USGenNE shall submit a notice of intent with respect to the preliminary design of the proposed windscreen for approval by the Salem Conservation Commission and shall file an application for a license under G.L. c. 91 based on that preliminary design. All other permit submissions, detailed engineering, procurement and installation of the windscreen will be completed as soon as possible after the Compliance Equipment Funding Date.

B. Long Term Compliance Measures: For each Reliability Unit at Salem Harbor, USGenNE shall undertake the following long-term compliance measures so long as the Compliance Equipment Funding Date is achieved on or before December 1, 2003:

1. Achieve compliance under this ACO with the Phase I NO_x and SO_2 provisions of the 7.29 Regulations on or before July 31, 2006.

2. Initiate critical path permitting for the Compliance Equipment, except with respect to the coal pile windscreen provided for in IV.A(6) *supra*, as follows:

i. by September 1, 2003, submit an application to the Salem Planning Board for Site Plan review and approval;

ii. by September 1, 2003, submit a petition for exemption from local zoning requirements pursuant to G.L.c. 40A, § 3; and

iii. by September 1, 2003, submit an application for a license under G.L. c. 91.

3. Provide SO_2 and NO_x allowance retirements, early reduction credits and/or offsets to bring Salem Harbor into compliance with the SO_2 and NO_x requirements of 310 CMR 7.29 for the period beginning October 1, 2005 until the Facility achieves compliance with the SO_2 and NO_x requirements of 310 CMR 7.29 as follows:

- SO_2 at the ratio of 1:1; and
- NO_x at the ratio of 1:1.

a. For the purpose of tracking the requirements of Section IV.B.3, establish an accounting mechanism (hereinafter "Compliance Account"). Beginning October 1, 2005, each pound of NO_x and SO_2 emitted from the Facility in excess of the applicable emissions rates under 310 CMR 7.29 shall be added to the Compliance Account until the date on which the Facility achieves compliance with such emission rates. The applicable emission rate for SO_2 as of October 1, 2005 is the rate set forth in 310 CMR 7.29(5)(a)(2)(a). The applicable emission rate for SO_2 as of October 1, 2007 is the rate set forth in 310 CMR 7.29(5)(a)(2)(b). The applicable emission rate for NO_x as of October 1, 2005 is the rate set forth in 310 CMR 7.29(5)(a)(1)(a). The applicable emission rate for NO_x as of October 1, 2007 is the rate set forth in 310 CMR 7.29(5)(a)(1)(b). Each allowance retirement, early reduction credit, and/or offset provided by USGenNE pursuant to Sections IV.B.3 and IV.D.(ii) shall be credited against the Compliance Account balance. USGenNE shall report the then-current balance of the Compliance Account in the quarterly reports provided pursuant to Section IV.F. below. To the extent that USGenNE uses NOx allowance retirements as a credit against the Compliance Account balance, it shall generate such surplus allowances solely from operations at the Facility using Good Utility Practice.

b. In the event that USGenNE is able to comply with the requirements of 310 CMR 7.29(5)(a)2.b.i. prior to October 1, 2007, then USGenNE may credit its Compliance Account deficits with one ton of SO_2 for each ton of SO_2 which USGenNE emits below the emission limits at 310 CMR 7.29(5)(a)2.b.i., provided however that no such credit shall be allowed if the SO_2 emissions reduction creates an Early Reduction Credit for SO_2, and that Early Reduction Credit has been applied to the Compliance Account.

4. Comply with the second phase of SO_2 emission limitations by October 1, 2007.

5. Implement the permitting milestone schedule included as Exhibit B and the construction milestone schedule included as Exhibit C.

C. Reliability Unit Funding Delay: If a Reliability Unit achieves a Compliance Equipment Funding Date after December 1, 2003, the deadlines set forth in Sections B.1, B.4. and B.5 shall be extended by a period of time equal to the period of time between December 1, 2003 and the date on which the Compliance Equipment Funding Date for such Unit is achieved. In all other

respects, the provisions of Section B shall apply. If a Reliability Unit does not achieve a Compliance Equipment Funding Date by July 31, 2005, the parties shall negotiate in good faith with respect to the future status of that Unit.

D. Non-Reliability Unit Obligations: At such time as a Reliability Unit becomes a Non-Reliability Unit, and provided that USGenNE continues performing the near term compliance measures set forth in Sections A.1, A.2, A.3 and A.5, USGenNE may continue to operate such Non-Reliability Unit for the longer of (i) the period from the date on which the ISO determines the Reliability Unit is a Non-Reliability Unit and October 1, 2005 or (ii) twelve months following the date on which the ISO determines the Reliability Unit is a Non-Reliability Unit provided, however, that if the Non-Reliability Unit achieves compliance with the requirements of the 7.29 Regulations prior to ceasing operations under this Section IV.D, it may continue to operate in compliance with the 7.29 Regulations. In the event that USGenNE continues to operate a Non-Reliability Unit pursuant to clause (ii) of this section or continues to operate a Non-Reliability Unit due to an event of Force Majeure, the provisions of Section IV.B.3 shall apply in addition to those of Sections A.1, A.2, A.3 and A.5.

E. Partial Station Operations: The parties acknowledge that the ISO may determine that only some Units at Salem Harbor are Reliability Units. If the ISO issues such a Determination, the provisions of Section IV.B. shall apply to such Reliability Units, provided that there is sufficient Compliance Equipment Funding available to meet its requirements. In the event there is not adequate Compliance Equipment Funding for such Reliability Unit, the provisions of IV.C. shall apply. If in the judgment of USGenNE the number or combination of units remaining Reliability Units renders infeasible the implementation of the pollution control strategy in Exhibit D, USGenNE may petition to amend its approved ECP, as modified by this ACO, to bring the remaining Reliability Units into compliance with the 7.29 Regulations. Approval of such an amendment shall be considered an ACO Permit.

F. Reporting Requirements:

1. Pursuant to the reporting requirements set forth in the Emission Control Plan Approval dated June 7, 2002, USGenNE shall submit quarterly reports to DEP including, but not limited to the following:

   a. status of permitting and construction of the Compliance Equipment;

   b. status of 18.4 Determination process for any Unit at Salem Harbor including any associated regulatory proceedings and/or litigation; and

   c. status of discussions, regulatory proceedings and/or litigation pertaining to Compliance Equipment Funding.

2. USGenNE will provide a copy of such quarterly reports to the Parties to this ACO.

3. In the first quarterly report submitted under this Section IV.F after a Final Project Schedule has been agreed upon with the vendor selected to construct the Compliance Equipment for Units 1, 2 and 3, USGenNE will provide a copy of such construction schedule.

V. Other Rights and Obligations of Parties

A. USGenNE shall have no obligation to implement the NO_x or SO_2 provisions of the Approved ECP beyond those obligations described in this ACO including Exhibit D. To the extent that the terms of the Approved ECP are inconsistent with those of this ACO, this ACO shall govern.

B. USGenNE shall endeavor to enter into an agreement with the South Essex Sewerage District for the purchase of gray water necessary to implement this ACO on commercially reasonable terms and conditions.

C. The incorporated entities that are signatories hereto acknowledge that their participation in any proceeding contemplated in this ACO shall be undertaken in the spirit of the terms and conditions hereof except as to the City with respect to Section IV.A(6). An indication of support for an alternate resource to provide reliable electric service to the North Shore and Greater Boston area of Massachusetts shall not be deemed a breach of this provision.

D. In the event of a permanent cessation of operations at Salem Harbor, USGenNE shall abide by all applicable federal and state statutes and regulations pertaining to the cessation of such operations.

E. The definitions of "Early Reduction Credits for NO_x," "Early Reduction Credits of SO_2," "NO_x Allowance", "SO_2 Allowance," allowances, credits, or offsets herein are not intended to preclude USGenNE from complying with Section IV.B.3. of this ACO with similar allowance, credit, or offset programs that may come into place in the future, providing that any such program shall only be eligible for compliance purposes if it is adopted or otherwise accepted by the Commonwealth of Massachusetts.

F. The Parties acknowledge that the cost of complying with the mercury, CO_2, Particulates and CO provisions of 310 CMR 7.29 are not known. USGenNE is not prohibited by this ACO from seeking relief from such requirements as may be necessary to honor its commitment under this ACO.

G. The date for compliance with the CO_2 requirements found at 310 CMR 7.29(5)(a)5.a. shall be October 1, 2006. The compliance date for the CO_2 requirements found at 310 CMR 7.29(5)(a)5.b. shall be October 1, 2008.

H. Nothing in this ACO shall prohibit USGenNE from seeking to amend the Approved ECP, as modified by the ACO, to achieve compliance with the 7.29 Regulations by alternate emission control strategies or fuels provided that they would achieve the same or higher level of emission reductions for the local community as do the terms of this ACO.

I. Where a notice, report, schedule or similar filing is required to be filed with a Party to this ACO, that Party shall provide a copy of same to all of the other entities listed in Section XIV below.

VI. Obligation of Successor Owner

Any successor owner of Salem Harbor shall be bound by the terms of this Order.

VII. Force Majeure

If a failure by USGenNE to comply with any provision of this ACO is caused by an event of Force Majeure, USGenNE shall be excused for such failure to comply for the period of time the noncompliance continued due to such event, not to exceed the amount of time lost due to the actual, unavoidable delay resulting from such event. USGenNE shall promptly, but in no event later than ten (10) days of learning of such event, notify the Department in writing, with a copy to all other entities listed in Section XIV below. The written notice shall state the nature of the event; the anticipated length and cause of the delay; the measures taken or to be taken to avoid or minimize the delay; and a timetable for taking those measures. Force Majeure is defined as any circumstance beyond the control of USGenNE, which could not have been foreseen and prevented by due diligence. Examples of an event of Force Majeure include, but are not limited to the following: delays in shipments of necessary equipment by suppliers; acts of war; acts of terrorism; acts of God; unanticipated delays due to accidents, strikes, freight embargoes, or other work stoppages; severe flood, fire, extreme weather conditions or other natural disasters; or the failure of any

ACO Permitting Authority to have issued a final non-appealable ACO Permit by the dates required for USGenNE to perform the activities necessary to implement the ACO in accordance with the schedules set forth herein. In the event of an ACO Permitting Authority Force Majeure, the presumption shall be that USGenNE is entitled to a day-for-day extension of its obligations hereunder but it shall, within the budgets established in connection with the Compliance Equipment Funding, nevertheless use commercially reasonable efforts to avoid or minimize the impacts of the ACO Permitting Force Majeure. An Event of Force Majeure does not excuse USGenNE from complying with the requirements of Section IV.B.3.

VIII. Stipulated Penalties

In the event that the Department believes that a violation of the terms of this ACO has occurred, it shall provide USGenNE with a written notice describing the alleged violation. If USGenNE fails to cure the violation within 10 days of receipt of such notice, USGenNE agrees to pay to the Department a stipulated penalty as follows:

Period of Violation	Penalty per Day
11th through 30th day	$3,000.00 per day
31st day onward	$5,000.00 per day

All stipulated penalties accruing under this ACO shall be paid within thirty (30) calendar days of the date that USGenNE receives a written claim thereof from the Department describing the violation, except if USGenNE challenges the basis of the Department's claim for stipulated penalties, in which case they shall be payable within thirty (30) calendar days of the date such challenge is resolved.

In the event that a violation is not corrected by the 31st day after notice is provided, the stipulated penalties set forth herein shall not preclude the Department from electing to pursue alternative remedies or penalties which may be available by reason of USGenNE's failure to comply with the requirements of this ACO. In the event the Department elects to pursue alternative remedies or statutory penalties, USGenNE shall not be required to pay stipulated penalties pursuant to this ACO. If after the 30th day of a violation the Department pursues such other remedy or statutory penalty, USGenNE will not be liable for stipulated penalties that would otherwise have accrued beyond the 30th day of any such violation. However, any stipulated penalties accrued prior to the 31st day must still be paid to the Department.

IX. Dispute Resolution

In the event the Parties cannot resolve any dispute with respect to the meaning or implementation of this ACO except with respect to Section IV.C., then the interpretation advanced by the Department shall be considered binding unless a Party invokes the dispute resolution provisions of this Section.

Except with respect to Section IV.C., if in the opinion of a Party there is a dispute with respect to the meaning or implementation of this ACO, that Party shall within thirty (30) days of identifying the matter in dispute send a written notice to the other Party, with a copy to all other entities listed in Section XIV below, which outlines the nature of the dispute. Any such dispute shall in the first instance be the subject of informal negotiations between the parties. That period of informal negotiations shall not extend beyond thirty (30) days from the date when the notice was sent unless the parties agree otherwise.

If informal negotiations are unsuccessful and the dispute concerns a matter within the jurisdiction of the Department, then the Department's position shall control unless a Party to this ACO files with the Office of Administrative Appeals a petition for an adjudicatory hearing, describing the nature of the dispute and proposing a resolution. Such petition must be filed within fifteen days after termination of informal negotiations.

If informal negotiations are unsuccessful, and the dispute concerns a matter that is not within the jurisdiction of the Department to decide, then the Party pursuing the dispute shall either initiate formal

mediation with all Parties, or file an action in the applicable venue.

X. Effect of ACO

A. Compliance with this Order shall satisfy USGenNE's obligations under the 7.29 Regulations with respect to 310 CMR 7.29(5)(a)(1), (2) and (5), including relevant provisions of the Emission Control Plan Approval issued to USGenNE with respect to Salem Harbor on June 7, 2002. The terms of this ACO modify the terms of that Approved ECP and no amendment to said Approved ECP shall be required to implement the terms of this ACO including Exhibit D. In addition, no approval under 310 CMR 7.02 shall be required to implement this ACO with respect to Units 1, 2, and 3. Compliance with this Order shall also be deemed to satisfy USGenNE's obligations under the notice of noncompliance issued to USGenNE with respect to Salem Harbor on March 3, 2003.

B. Except as provided in Section IV, this ACO shall not relieve USGenNE from its obligations to comply with any Federal or state law, regulation or permit. Nothing in this ACO shall preclude USGenNE from applying to regulatory agencies for licenses, approvals, permits, amendments or modifications to licenses, approvals, or permits.

C. This ACO shall not constitute evidence in any proceeding, except in a proceeding to enforce the provisions of this ACO or in any proceeding regarding the meaning of a provision of the ACO.

D. This ACO shall apply to USGenNE, its officers, employees, agents, contractors, and consultants. USGenNE shall not violate this ACO and shall not allow or suffer its officers, employees, agents, contractors, or consultants to violate this ACO. A violation of this ACO by any of the foregoing shall constitute a violation by USGenNE.

XI. Termination

A. This ACO shall terminate with respect to each Reliability Unit at Salem Harbor on the later date on which either of the following occur:

1. Submittal by USGenNE of a report on January 30, 2009 pursuant to 310 CMR 7.29(7) demonstrating compliance of such unit with the emission limits for CO_2 set forth at 310 CMR 7.29(5)(a)5.b., or

2. Filing of a quarterly report pursuant to Section IV.F. documenting a zero balance for both NO_x and SO_2 in the Compliance Account for that unit.

B. This ACO shall terminate with respect to each Non-Reliability Unit on permanent cessation of operations of each such unit.

XII. Nonwaiver Provision

Failure of the Department to complain of any action or inaction on the part of USGenNE shall not constitute a waiver by the Department of any of its rights hereunder. Furthermore, no waiver by the Department of any provision of this Consent Order shall be construed as a waiver of any other provision of this Order. Failure of USGenNE to complain of any action or inaction on the part of the Department shall not constitute a waiver by USGenNE of any of its rights hereunder. Furthermore, no waiver by USGenNE of any provision of this Consent Order shall be construed as a waiver of any other provision of this Order.

XIII. Severability

If any term or provision of this ACO, or its application thereof to any person or circumstance shall to any extent be invalid or unenforceable, the remainder of this ACO shall not be affected thereby, and each remaining term and provision shall be valid and enforceable to the fullest extent permitted by law.

XIV. Notices

If to USGen New England, Inc.:

USGen New England, Inc.
7600 Wisconsin Avenue
Bethesda, MD 20814-6161
Attention: General Counsel
Telephone: 301-280-6800
Fax: 301-280-6913
Email: sanford.hartman@neg.pge.com

Salem Harbor Station
24 Fort Avenue
Salem, MA 01970-5693
Attention: General Manager
Telephone: 978-740-8234
Fax: 978-740-8215
Email: michael.fitzgerald@neg.pge.com

Foley Hoag LLP
155 Seaport Boulevard
Boston, MA 02210-2600
Attention: Mary Beth Gentleman, Esquire
Telephone: 617-832-1199
Fax: 617-832-7000
Email: mgentleman@foleyhoag.com

If to the Department of Environmental Protection:

MA Department of Environmental Protection
Office of the General Counsel
One Winter Street
Boston, MA 02108
Attention: Edward J. Braczyk
Telephone: 617-292-5500
Fax: 617-338-5511
Email: edward.braczyk@state.ma.us

If to the City of Salem:

City of Salem
City Solicitor
93 Washington Street
Salem, MA 01970
Telephone: 978-745-9595
Fax: 978-740-0072
Email: jwalsh@salem.com

If to Conservation Law Foundation, on behalf of 55 member intervenor citizens group:

Conservation Law Foundation
62 Summer Street
Boston, MA 02110
Attention: Seth Kaplan
Telephone: 617-350-0990
Fax: 617-350-4030
Email: skaplan@clf.org

If to HealthLink:

HealthLink
c/o Bright
3 Bridge Street
Marblehead, MA 01945
Telephone: 781-631-8104
Email: HealthLink@comcast.com

If to Wenham Lake Watershed Association:

Wenham Lake Watershed Association
c/o Ehrlich
46 Gerald Road
Marblehead, MA 01945
Telephone: 781-639-0299
Fax: 781-639-0299
Email: lale@comcast.com

If to Clean Water Action:

Clean Water Action
36 Bromfield St., Suite 204
Boston, MA 02108
Attention: Cindy Luppi
Telephone: 617-338-8131
Fax: 617-338-6449
Email: cluppi@cleanwater.org

If to MASSPIRG:

MASSPIRG
29 Temple Place
Boston, MA 02111
Attention: Frank Gorke
Telephone: 617-292-4800
Fax: 617-292-8057
Email: frank@masspirg.org

XV. Entire Agreement

This constitutes the entire understanding and agreement between the Parties to this ACO with respect to the subject matter of this ACO.

Each of the undersigned represents that she/he has the authority to sign this ACO and to legally bind himself and/or the party on whose behalf such representative is signing. This ACO shall take effect on the date of the last signature set forth below.

USGEN NEW ENGLAND, INC.

By:_____

Typed Name:_____

Title:_____

Date:__June 19, 2003_____

DEPARTMENT OF ENVIRONMENTAL PROTECTION

By:_____

Typed Name:_____

Title:_____

Date:__June 19, 2003_____

CITY OF SALEM

By:_____

Typed Name:_____

Title:_____

Date:__June 19, 2003_____

By their attorneys

CONSERVATION LAW FOUNDATION, on behalf of 55 member intervenor citizens group

By:_____

Typed Name:_____

Title:_____

Date:___June 19, 2003_____

Each of the undersigned represents that she/he has the authority to sign this ACO and to legally bind himself and/or the party on whose behalf such representative is signing. This ACO shall take effect on the date of the last signature set forth below.

USGEN NEW ENGLAND, INC.

By:_____

Typed Name:_____

Title:_____

Date:__June 19, 2003_____

DEPARTMENT OF ENVIRONMENTAL PROTECTION

By:_____

Typed Name:_____

Title:_____

Date:__June 19, 2003_____

CITY OF SALEM

By:_____

Typed Name:_____

Title:_____

Date:__June 19, 2003_____

By their attorneys

CONSERVATION LAW FOUNDATION, on behalf of 55 member intervenor citizens group

By:_____

Typed Name:_____Seth Kaplan_____

Title:_____Senior Attorney / Project Director_____

Date: __June 19, 2003_____

Each of the undersigned represents that she/he has the authority to sign this ACO and to legally bind himself and/or the party on whose behalf such representative is signing. This ACO shall take effect on the date of the last signature set forth below.

USGEN NEW ENGLAND, INC.

By:_____

Typed Name:_____

Title:_____

Date:__June 19, 2003_____

DEPARTMENT OF ENVIRONMENTAL PROTECTION

By: Edward P. Kunce

Typed Name:_____

Title:_____

Date:__June 19, 2003_____

CITY OF SALEM

By: Stanley J. Usovicz Jr.

Typed Name: STANLEY J. USOVICZ, JR.

Title: MAYOR

Date:__June 19, 2003_____

By their attorneys

CONSERVATION LAW FOUNDATION, on behalf of 55 member intervenor citizens group

By:_____

Typed Name:_____

Title:_____

Date:__June 19, 2003_____

Each of the undersigned represents that she/he has the authority to sign this ACO and to legally bind himself and/or the party on whose behalf such representative is signing. This ACO shall take effect on the date of the last signature set forth below.

USGEN NEW ENGLAND, INC.

By: P. Chrisman Iribe

Typed Name: P. Chrisman Iribe

Title: President

Date: June 19, 2003

DEPARTMENT OF ENVIRONMENTAL PROTECTION

By: _____

Typed Name: _____

Title: _____

Date: June 19, 2003

CITY OF SALEM

By: _____

Typed Name: _____

Title: _____

Date: June 19, 2003

By their attorneys

CONSERVATION LAW FOUNDATION, on behalf of 55 member intervenor citizens group

By: _____

Typed Name: _____

Title: _____

Date: June 19, 2003

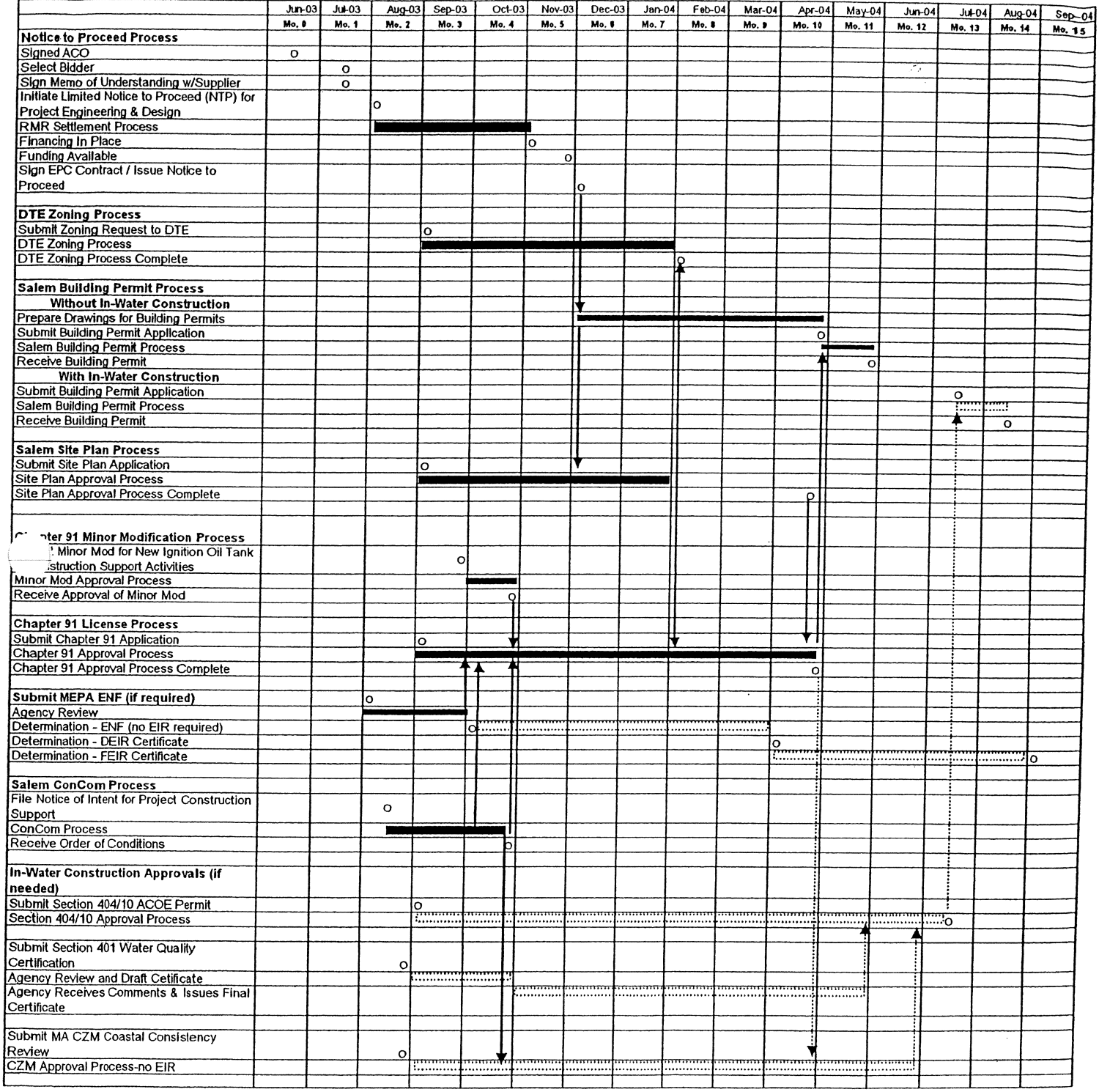
Salem Harbor Unit 4 Short Term NOx
Illustrative Schedule
6/11/2003

Exhibit A

	Jun-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Jan-04	Feb-04	Mar-04	Apr-04	May-04	Jun-04	Jul-04	Aug-04	Sep-04	Oct-04
	Mo. 0	Mo. 1	Mo. 2	Mo. 3	Mo. 4	Mo. 5	Mo. 6	Mo. 7	Mo. 8	Mo. 9	Mo. 10	Mo. 11	Mo. 12	Mo. 13	Mo. 14	Mo. 15	Mo. 16
Submit Revised 7.02 for SH4 SNCR	○																
Boiler Testing w/Current Burner Tips	○	▬	▬														
Design/Fabricate New Burner Tips				▬													
Boiler Testing w/New Burner Tips					▬												
Funding Available						○											
Temperature Mapping for SNCR					▬												
CFD Modeling & SNCR System Design						▬	▬										
Receive Approved 7.02 Application for SH4 SNCR								○									
Release SNCR for Fabrication								○									
SNCR Equipment Fabricated and Delivered								▬	▬	▬	▬						
Installation of In-Boiler SNCR Equipment											▬	▬	▬				
Installation of Non-Boiler SNCR Equipment													▬	▬	▬		
Commissioning															▬	▬	
In-Service																○	
(assumes no MEPA review required)																	

n Harbor Emission Control Project
...strative Permit Schedule
6/11/2003

Exhibit B



Salem Harbor Emission Control Project
Illustrative Construction Schedule
6/11/2003

Exhibit C (page 1 of 2)

	May-04	Jun-04	Jul-04	Aug-04	Sep-04	Oct-04	Nov-04	Dec-04	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05
	Mo. 11	Mo. 12	Mo. 13	Mo. 14	Mo. 15	Mo. 16	Mo. 17	Mo. 18	Mo. 19	Mo. 20	Mo. 21	Mo. 22	Mo. 23	Mo. 24
Salem Building Permit Process														
Without In-Water Construction														
Receive Building Permit	○													
With In-Water Construction														
Receive Building Permit				○										
Construction Process (assumes no In-Water Construction)														
Contractor Mobilization	○													
Mobilization Process and Foundation Preparation														
Building Foundations														
Equipment Erection														
Complete Mechanical Construction														
Commissioning / Start-Up														
On-Line														

Exhibit C (page 2 of 2)

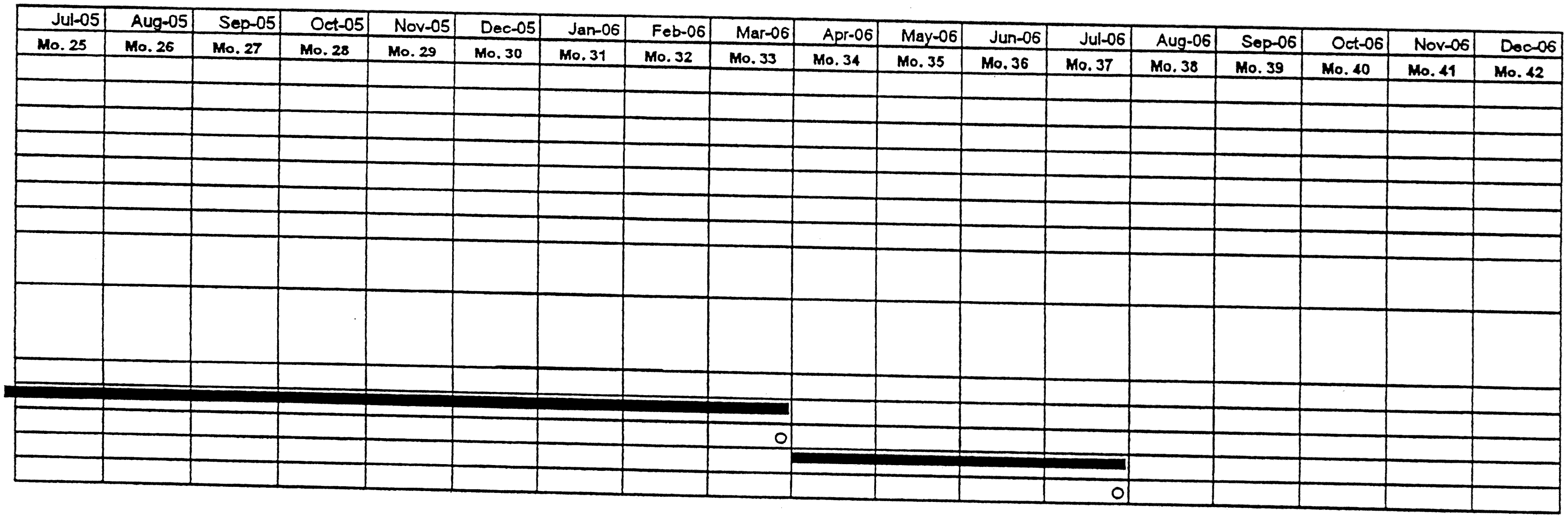


EXHIBIT D

ACO MODIFICATIONS TO
EXHIBIT A OF APPROVED ECP
FOR SALEM HARBOR

This exhibit describes the pollution control strategies/equipment; emission limitations/restrictions; monitoring and testing requirements; record keeping requirements; reporting requirements; and special conditions, the facility shall employ to achieve compliance with 310 CMR 7.29 under the terms of this ACO. Where there is a conflict with 310 CMR 7.29, the terms of the ACO control.

1. EQUIPMENT DESCRIPTION

The following emission units (Table 1) are subject to and regulated by the **Administrative Consent Order:**

Table 1*

EU #	DESCRIPTION OF EMISSION UNIT	EU DESIGN CAPACITY (MMBTU/HR)	EU DESIGN CAPACITY MW (NET)	POLLUTION CONTROL MEASURES (PCM) [1]
EU 1	Babcock & Wilcox Model No. RB103 Water Tube Boiler	954	84	Low NO_x Burners
				Selective Catalytic Reduction
				Combustion Tuning and Controls
				Electrostatic Precipitators
				Management of Lower Sulfur Fuels
				Dry Flue Gas Desulfurization with Fabric Filter
EU 2	Babcock & Wilcox Model No. RB103 Water Tube Boiler	966	81	Low NO_x Burners
				Selective Catalytic Reduction
				Combustion Tuning and Controls
				Electrostatic Precipitators
				Management of Lower Sulfur Fuels
				Dry Flue Gas Desulfurization with Fabric Filter
EU 3	Babcock & Wilcox Model No. RB284 Water Tube Boiler	1,696	150	Low NO_x Burners with Overfire Air
				Selective Catalytic Reduction
				Combustion Tuning and Controls
				Electrostatic Precipitators
				Management of Lower Sulfur Fuels
				Dry Flue Gas Desulfurization with Fabric Filter
EU 4	Riley Stoker Model No. 1SR Water Tube Boiler	4,800	440	Low NO_x Burners
				Combustion Tuning and Controls
				Electrostatic Precipitators
				Management of Lower Sulfur Fuels
				Selective Non-Catalytic Reduction

Table 1 Notes:

1. Details of the Pollution Control Measures including alternatives under consideration are

described in Sections E, F, and G of the ECP application and Amended ECP application. In addition, the facility is proposing to install ash recycling processing equipment to reduce fly ash waste from Units 1, 2 and 3, and is also proposing to install windscreens around the coal pile to minimize potential fugitive coal emissions from the processing and management of the coal pile.

* Legend to Abbreviated Terms within Table 1:

EU # = Emission Unit Number
MMBTU/HR = fuel heat input in million British Thermal Units per hour
MW (NET) = net electrical output in Megawatts
NO_x = Nitrogen Oxides

2. APPLICABLE REQUIREMENTS

A. EMISSION LIMITS AND RESTRICTIONS

USGen-NE shall comply with the emission limits/restrictions as contained in Table 2 below of this **Administrative Consent Order.**

Table 2 *

EU #	RESTRICTION/ OPERATING PRACTICES	POLLUTANT	EMISSION LIMIT/STANDARD	APPLICABLE REGULATION AND/OR APPROVAL NUMBER[1]
EU 1, EU 2, EU 3, EU 4	NA	NO_x	Shall not exceed 1.5 lbs/MWh calculated over any consecutive 12 month period, recalculated monthly.	310 CMR 7.29(5)(a)1.a.
			Shall not exceed 3.0 lbs/MWh calculated over any individual month.	310 CMR 7.29(5)(a)1.b.
		SO_2	Shall not exceed 6.0 lbs/MWh calculated over any consecutive 12 month period, recalculated monthly.	310 CMR 7.29(5)(a)2.a.
			Shall not exceed 3.0 lbs/MWh calculated over any 12 month period, recalculated monthly.	310 CMR 7.29(5)(a)2.b.i.
			Shall not exceed 6.0 lbs/MWh calculated over any individual month.	310 CMR 7.29(5)(a)2.b.ii.
		Hg	Total annual mercury emissions from combustion of solid fuels in units subject to Part 72 located at an affected facility shall not exceed the average annual emissions calculated using the results of the stack tests required in 310 CMR 7.29(5)(a)3.d.ii..	310 CMR 7.29(5)(a)3.c.
		CO_2	Emissions of carbon dioxide from the affected facility in the calendar year, expressed in tons, from Part 72 units located at the affected facility shall not exceed historical actual emissions of 4,286,053 tons. [2]	310 CMR 7.29(5)(a)5.a.
			Shall not exceed 1800 lbs/MWh in the calendar year.	310 CMR 7.29(5)(a)5.b.

Table 2 Notes:

1. The ACO provides the compliance schedule for adherence to the emission limits/standards provided in Table 2 above.

2. The Department is in the process of developing provisions for the quantification and certification of Greenhouse Gas (GHG) reductions for use in demonstrating compliance with the CO_2 emission limitations contained in 310 CMR 7.29. The Department will review and approve or deny proposals for off-site, sequestration, or non-contemporaneous reductions (i.e. early on-site reductions) of CO2 or other GHG after adoption of amendments to 310 CMR 7.00: Appendix B, and other regulatory sections, if necessary.

* Legend to Abbreviated Terms within Table 2:

EU# = Emission Unit Number
lbs/MWh = pounds per Megawatt-hour of net electrical output
NO_x = Nitrogen Oxides
SO_2 = Sulfur Dioxide
Hg = Mercury
CO = Carbon Monoxide
CO_2 = Carbon Dioxide
PM 2.5 = Fine Particulate Matter
NA = not applicable

B. COMPLIANCE DEMONSTRATION

The facility is subject to the monitoring/testing, record keeping, and reporting requirements as contained in Tables 3, 4 and 5 below and 310 CMR 7.29, as well as the applicable requirements contained in Table 2:

Table 3 *

EU#	MONITORING/TESTING REQUIREMENTS
EU 1, EU 2, EU 3, EU 4	Actual emissions shall be monitored as a facility total for all units included in the calculation demonstrating compliance. Actual emissions shall be monitored in accordance with 40 CFR Part 75 for SO_2, CO_2, and NO_x.
	Monitor actual net electrical output, expressed in megawatt-hours. Actual net electrical output shall be provided for individual units and as a facility total for all units included in the calculation demonstrating compliance.
EU 1, EU 2, EU 3	In accordance with 310 CMR 7.29(5)(a)3.d.i., sample each shipment of coal at the time received and test the coal for chlorine and mercury content. Perform stack testing for mercury in accordance with 310 CMR 7.29(5)(a)3.d.ii..

* Legend to Abbreviated Terms within Table 3:

EU# = Emission Unit Number
NO_x = Nitrogen Oxides
SO_2 = Sulfur Dioxide
CO_2 = Carbon Dioxide

Table 4 *	
EU#	RECORD KEEPING REQUIREMENTS
EU 1, EU 2, EU 3, EU 4	Maintain a record of actual emissions for each regulated pollutant for each of the preceding 12 months. Actual emissions shall be recorded as a facility total for all units included in the calculation demonstrating compliance. Actual emissions provided under this section shall be recorded in accordance with 40 CFR Part 75 for SO_2, CO_2, and NO_x
	Maintain a record of actual net electrical output for each of the preceding 12 months, expressed in megawatt-hours. Records of actual net electrical output shall be maintained for individual units and as a facility total for all units included in the calculation demonstrating compliance.
	Maintain a record of the resulting output-based emission rates for each of the preceding 12 months, and each of the 12 consecutive rolling month time periods, expressed in pounds per megawatt-hour. Output based emission rates shall be provided for individual emission units and as a facility total for all units included in the calculation demonstrating compliance.
	Keep all measurements, data, reports and other information required by 310 CMR 7.29 on-site for minimum of five years, or any other period consistent with the affected facility's Operating Permit.
EU 1, EU 2, EU 3	Pursuant to 310 CMR 7.29(5)(a)3.d.i., maintain records of mercury and chlorine content of each shipment of coal as tested at the time received. Maintain records of each stack test for mercury as per 310 CMR 7.29(5)(a)3.d.ii..

* Legend to Abbreviated Terms within Table 4:

EU# = Emission Unit Number
NO_x = Nitrogen Oxides
SO_2 = Sulfur Dioxide
CO_2 = Carbon Dioxide

Table 5 *	
EU#	REPORTING REQUIREMENTS
EU 1, EU 2, EU 3, EU 4	By January 30 of the year following the implementation of the ACO for the facility, and January 30 of each calendar year thereafter, the company representative responsible for compliance shall submit a compliance report to the Department demonstrating the facility's compliance status with the emission standards contained in the ACO. Effective July 31, 2006, the company representative responsible for compliance shall submit a compliance report to the Department demonstrating the facility's compliance status with the emission standards contained in 310 CMR 7.29(5)(a). The report shall demonstrate the facility's compliance status with applicable monthly emission rates for each month of the previous calendar year, and each of the twelve previous consecutive 12-month periods. The compliance report shall include all statements listed in 310 CMR 7.29(7)(b)4. [1]
	The Department may verify the facility's compliance status by whatever means necessary, including but not limited to requiring the affected facility to submit information on actual electrical output of company generating units provided by the New England Independent System Operator (ISO), or any successor thereto.
EU 1, EU 2, EU 3	In accordance with 310 CMR 7.29(5)(a)3.d.i., submit a report containing the mercury and chlorine content test results of each coal shipment received with the results of the next stack testing for mercury as required per 310 CMR 7.29(5)(a)3.d.ii..
FACILITY	Submit by January 15, April 15, July 15 and October 15 for the previous three months respectively, a 7.29 construction status report which identifies the construction activities which have occurred during the past three months, and those activities anticipated for the following three months, and progress toward achieving compliance with the ACO, as provided in Section IV F.

Table 5 Notes:

1. If the ISO final settlement of actual electrical output is not available, the facility shall submit a compliance report based on provisional values of actual electrical output. Upon receiving certified ISO values of actual electrical output for all provisional months within the calendar year, the facility shall submit a revised compliance report within 30 days thereafter.

* Legend to Abbreviated Terms within Table 5:

EU# = Emission Unit Number

3. SPECIAL CONDITIONS

1. The Department may verify compliance of 310 CMR 7.29(5) by whatever means necessary, including but not limited to: inspection of a unit's operating records; requiring the facility to submit information on actual electrical output of company generating units provided to that person by the New England Independent System Operator, or any successor thereto; testing emission monitoring devices; and, requiring the facility to conduct emissions testing under the supervision of the Department.

2. The Department is not approving or denying any off-site or non-contemporaneous proposed CO_2 reduction measures at this time. 310 CMR 7.29(5)(a)5.c. and d. provide that compliance with the CO_2 emission limitations may be demonstrated by using offsite reductions or sequestration in addition to onsite reductions, as long as certain established conditions are met. However, while there is a provision for using early reductions of SO2 to meet the SO2 emissions limit in 310 CMR 7.29(5)(a)2.a., there is no similar regulatory provision for use of early reductions of CO2 for compliance with 310 CMR7.29(5)(a)5. The Department is in the process of developing provisions for the quantification and certification of Greenhouse Gas (GHG) reductions for use in demonstrating compliance with the CO_2 emission limitations contained in 310 CMR 7.29. The Department will review and approve or deny proposals for off-site, sequestration, or non-contemporaneous reductions (i.e. early on-site reductions) of CO2 or other GHG after adoption of amendments to 310 CMR 7.00: Appendix B, and other regulatory sections, if necessary.

3. Ammonia (NH_3) emissions, or "ammonia slip", from Selective Catalytic Reduction on Units 1, 2 and 3 shall not exceed 2 parts per million by volume, dry basis corrected to 3 percent Oxygen (O_2), measured at the stack.

4. Ammonia (NH_3) emissions, or "ammonia slip", from Selective Non-Catalytic Reduction on Unit 4 shall not exceed 10 parts per million by volume, dry basis corrected to 3 percent Oxygen (O_2), measured at the stack.

5. The facility shall maintain continuous compliance at all times with the terms of the ACO and this Exhibit, consistent with the applicable emission rates in 310 CMR 7.29.

6. Should a condition of air pollution occur as a result of the operation of these units, then the facility shall immediately take appropriate steps to abate said condition even though the facility is otherwise in compliance with the ACO and 310 CMR 7.29.

APPENDIX B

ORDER OF CONDITIONS NO. 64-348

DOCUMENT NO. 419705

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:
64-348
Provided by DEP

A. General Information

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.

From:

Salem
Conservation Commission

This issuance if for (check one):

COPY

☒ Order of Conditions

☐ Amended Order of Conditions

To: Applicant:

USGen New England, Inc., Salem Harbor Station
Name

24 Fort Avenue
Mailing Address

Salem | MA | 01970
City/Town | State | Zip Code

Property Owner (if different from applicant):

Same
Name

Mailing Address

City/Town | State | Zip Code

1. Project Location:

24 Fort Avenue | Salem
Street Address | City/Town

Map 41 | Parcel 0278
Assessors Map/Plat Number | Parcel/Lot Number

2. Property recorded at the Registry of Deeds for:

Essex | ~~77~~ 353 | 56738
County | Book | Page

~~19031~~ 69721
Certificate (if registered land)

3. Dates:

April 10, 2003 | May 8, 2003 | May 8, 2003
Date Notice of Intent Filed | Date Public Hearing Closed | Date of Issuance

4. Final Approved Plans and Other Documents (attach additional plan references as needed):

Removal of Tank D-5 and installation of Two Concrete Tie Blocks and Fender, Site Plan, Salem Harbor Station, USGen NE, Salem MA, Sheets 1. | March, 2003
Date

5. Final Plans and Documents Signed and Stamped by:

NA
Name

6. Total Fee:

$500.00
(from Appendix B: Wetland Fee Transmittal Form)

B. Findings

Findings pursuant to the Massachusetts Wetlands Protection Act:

Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act. Check all that apply:

☐ Public Water Supply	☐ Land Containing Shellfish	☒ Prevention of Pollution
☐ Private Water Supply	☐ Fisheries	☐ Protection of Wildlife Habitat
☐ Groundwater Supply	☐ Storm Damage Prevention	☒ Flood Control

Furthermore, this Commission hereby finds the project, as proposed, is: (check one of the following boxes)

Approved subject to:

☒ the following conditions which are necessary, in accordance with the performance standards set forth in the wetlands regulations, to protect those interests checked above. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.

Denied because:

☐ the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations to protect those interests checked above. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect these interests, and a final Order of Conditions is issued.

☐ the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).

General Conditions (only applicable to approved projects)

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.

2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.

3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.

B. Findings (cont.)

4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
   a. the work is a maintenance dredging project as provided for in the Act; or
   b. the time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.

5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order.

6. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.

7. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.

8. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to this Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.

9. A sign shall be displayed at the site not less then two square feet or more than three square feet in size bearing the words,

   "Massachusetts Department of Environmental Protection" [or, "MA DEP"]

   "File Number 64-348 "

10. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before DEP.

11. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.

12. The work shall conform to the plans and special conditions referenced in this order.

13. Any change to the plans identified in Condition #12 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.

14. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.

B. Findings (cont.)

15. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.

16. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.

17. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.

Special Conditions (use additional paper, if necessary):

18. The Conservation Commission shall be notified 48 hour prior to the commencement of work.
19. Spill kits shall be on site at all times in the event of an accidental hydraulic or fuel leak and/or spill.
20. A professional LSP shall be on site during the demolition and removal of the fuel tank and during the excavation for the installation of the tie blocks.
21. In association with the installation of the wooden fenders, a boom shall be installed in the water to encompass the work area. This will provide a means of collecting any debris that may fall into the water. The boom and any collected debris shall be removed upon completion of the fender work.

Findings as to municipal bylaw or ordinance

Furthermore, the Salem (Conservation Commission) hereby finds (check one that applies):

☐ that the proposed work cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw specifically:

Name — Municipal Ordinance or Bylaw

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order of Conditions is issued.

☐ that the following additional conditions are necessary to comply with a municipal ordinance or bylaw, specifically:

Name — Municipal Ordinance or Bylaw

The Commission orders that all work shall be performed in accordance with the said additional conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent,

B. Findings (cont.)

Additional conditions relating to municipal ordinance or bylaw:

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.

May 8, 2003
Date

This Order must be signed by a majority of the Conservation Commission. The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office (see Appendix A) and the property owner (if different from applicant).

Signatures:

On Eighth
Day

Of May, 2003
Month and Year

before me personally appeared

Above Names

to me known to be the person described in and who executed the foregoing instrument and acknowledged that he/she executed the same as his/her free act and deed.

Notary Public

August 30, 2007
My Commission Expires

This Order is issued to the applicant as follows:

☐ by hand delivery on
Date

☒ by certified mail, return receipt requested, on
May 14, 2003
Date

C. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate DEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Appendix E: Request of Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act, (M.G.L. c. 131, § 40) and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.

D. Recording Information

This Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Conditions. The recording information on Page 7 of Form 5 shall be submitted to the Conservation Commission listed below.

Salem
Conservation Commission

D. Recording Information (cont.)

Detach on dotted line, have stamped by the Registry of Deeds and submit to the Conservation Commission.

To:

Salem
Conservation Commission

Please be advised that the Order of Conditions for the Project at:

24 Fort Avenue — Project Location
64-348 — DEP File Number

Has been recorded at the Registry of Deeds of:

County — Book — Page

for:

Property Owner

and has been noted in the chain of title of the affected property in:

Book — Page

In accordance with the Order of Conditions issued on:

Date

If recorded land, the instrument number identifying this transaction is:

Instrument Number

If registered land, the document number identifying this transaction is:

Document Number

Signature of Applicant

APPENDIX C

NEGATIVE DETERMINATION OF APPLICABILITY FOR FILLING OF WASTE WATER TREATEMENT BASINS.

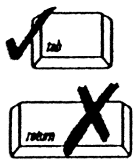
Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 2 – Determination of Applicability

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

A. General Information

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



From:

Salem
Conservation Commission

To: Applicant

USGen New England, Inc., Salem Harbor Station
Name

Salem Harbor Station, 24 Fort Avenue
Mailing Address

Salem | MA | 01970
City/Town | State | Zip Code

Property Owner (if different from applicant):

Same

Mailing Address

City/Town | State | Zip Code

1. Title and Date of Final Plans and Other Documents:

Attachment B (from RDA), Project Plans, Sheet 1 of 1 — Title
Oct. 2002 — Final Date (or Revised Date if applicable)

2. Date Request Filed:

October 30, 2002

B. Determination

Pursuant to the authority of M.G.L. c. 131, § 40, the Conservation Commission considered your Request for Determination of Applicability, with its supporting documentation, and made the following Determination.

Project Description (if applicable):

Filling of four manmade waste treatment basins and removal of a windrow storage area, lime equipment and associated structures.

Project Location:

24 Fort Avenue — Street Address
Salem — City/Town
Map 41 — Assessors Map/Plat Number
Lot 271 — Parcel/Lot Number

B. Determination (cont.)

☐ 6. The following area and/or work, if any, is subject to a municipal ordinance or bylaw but not subject to the Massachusetts Wetlands Protection Act:

☐ 7. If a Notice of Intent is filed for the work in the Riverfront Area described on referenced plan(s) and document(s), which includes all or part of the work described in the Request, the applicant must consider the following alternatives. (Refer to the wetland regulations at 10.58(4)c. for more information about the scope of alternatives requirements):

- ☐ Alternatives limited to the lot on which the project is located.
- ☐ Alternatives limited to the lot on which the project is located, the subdivided lots, and any adjacent lots formerly or presently owned by the same owner.
- ☐ Alternatives limited to the original parcel on which the project is located, the subdivided parcels, any adjacent parcels, and any other land which can reasonably be obtained within the municipality.
- ☐ Alternatives extend to any sites which can reasonably be obtained within the appropriate region of the state.

Negative Determination
Note: No further action under the Wetlands Protection Act is required by the applicant. However, if the Department is requested to issue a Superseding Determination of Applicability, work may not proceed on this project unless the Department fails to act on such request within 35 days of the date the request is post-marked for certified mail or hand delivered to the Department. Work may then proceed at the owner's risk only upon notice to the Department and to the Conservation Commission. Requirements for requests for Superseding Determinations are listed at the end of this document.

☐ 1. The area described in the Request is not an area subject to protection under the Act or the Buffer Zone.

☐ 2. The work described in the Request is within an area subject to protection under the Act, but will not remove, fill, dredge, or alter that area. Therefore, said work does not require the filing of a Notice of Intent.

☒ 3. The work described in the Request is within the Buffer Zone, as defined in the regulations, but will not alter an Area subject to protection under the Act. Therefore, said work does not require the filing of a Notice of Intent, subject to the following conditions (if any).

1.The Salem Conservation Commission shall be notified 48 hours in advance prior to the commencement of work.
2. All stockpiled materials shall be stored outside the 100 foot Buffer Zone.
3. Erosion controls shall be installed according to the RDA filing.

☐ 4. The work described in the Request is not within an Area subject to protection under the Act (including the Buffer Zone). Therefore, said work does not require the filing of a Notice of Intent, unless and until said work alters an Area subject to protection under the Act.

B. Determination (cont.)

The following Determination(s) is/are applicable to the proposed site and/or project relative to the Wetlands Protection Act and regulations:

Positive Determination
Note: No work within the jurisdiction of the Wetlands Protection Act may proceed until a final Order of Conditions (issued following submittal of a Notice of Intent or Abbreviated Notice of Intent) has been received from the issuing authority (i.e., Conservation Commission or the Department of Environmental Protection).

☐ 1. The area described on the referenced plan(s) is an area subject to protection under the Act. Removing, filling, dredging, or altering of the area requires the filing of a Notice of Intent.

☐ 2a. The boundary delineations of the following resource areas described on the referenced plan(s) are confirmed as accurate. Therefore, the resource area boundaries confirmed in this Determination are binding as to all decisions rendered pursuant to the Wetlands Protection Act and its regulations regarding such boundaries for as long as this Determination is valid.

_____

_____

_____

☐ 2b. The boundaries of resource areas listed below are not confirmed by this Determination, regardless of whether such boundaries are contained on the plans attached to this Determination or to the Request for Determination.

_____

_____

_____

☐ 3. The work described on referenced plan(s) and document(s) is within an area subject to protection under the Act and will remove, fill, dredge, or alter that area. Therefore, said work requires the filing of a Notice of Intent.

☐ 4. The work described on referenced plan(s) and document(s) is within the Buffer Zone and will alter an Area subject to protection under the Act. Therefore, said work requires the filing of a Notice of Intent.

☐ 5. The area and/or work described on referenced plan(s) and document(s) is subject to review and approval by:

_____
Name of Municipality

Pursuant to the following municipal wetland ordinance or bylaw:

_____
Name Ordinance or Bylaw Citation

B. Determination (cont.)

☐ 5. The area described in the Request is subject to protection under the Act. Since the work described therein meets the requirements for the following exemption, as specified in the Act and the regulations, no Notice of Intent is required:

Exempt Activity (site applicable statuatory/regulatory provisions)

☐ 6. The area and/or work described in the Request is not subject to review and approval by:

Name of Municipality

Pursuant to a municipal wetlands ordinance or bylaw.

Name | Ordinance or Bylaw Citation

C. Authorization

This Determination is issued to the applicant and delivered as follows:

☐ by hand delivery on _____ Date

☒ by certified mail, return receipt requested on November 21, 2002 Date

This Determination is valid for **three years** from the date of issuance (except Determinations for Vegetation Management Plans which are valid for the duration of the Plan). This Determination does not relieve the applicant from complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.

This Determination must be signed by a majority of the Conservation Commission. A copy must be sent to the appropriate DEP Regional Office (see Appendix A) and the property owner (if different from the applicant).

Signatures: Abby Burns

(per) November 15, 2002 Date

D. Appeals

The applicant, owner, any person aggrieved by this Determination, any owner of land abutting the land upon which the proposed work is to be done, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate Department of Environmental Protection Regional Office (see Appendix A) to issue a Superseding Determination of Applicability. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and Fee Transmittal Form (see Appendix E: Request for Departmental Action Fee Transmittal Form) as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Determination. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant if he/she is not the appellant. The request shall state clearly and concisely the objections to the Determination which is being appealed. To the extent that the Determination is based on a municipal ordinance or bylaw and not on the Massachusetts Wetlands Protection Act or regulations, the Department of Environmental Protection has no appellate jurisdiction.

APPENDIX D

U.S. FISH AND WILDLIFE SERVICES LETTER – AUGUST 25, 2000

United States Department of the Interior

FISH AND WILDLIFE SERVICE

New England Field Office
22 Bridge Street, Unit #1
Concord, New Hampshire 03301-4986

RE: Salem Harbor Station Boiler Replacement
Salem, Massachusetts

August 25, 2000

Mark Slade
Earth Tech
196 Baker Avenue
Concord, MA 01742

Dear Mr. Slade:

This is in response to your July 20, 2000 letter requesting information on the presence of federally-listed and proposed, endangered or threatened species in relation to the proposed Boiler Replacement Project at Salem Harbor Station, located at 24 Fort Avenue in Salem, Massachusetts. Our comments are provided in accordance with Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

Based on information currently available to us, no federally-listed or proposed threatened or endangered species under the jurisdiction of the U.S. Fish and Wildlife Service are known to occur in the project area.

Thank you for your cooperation. Please contact me at 603-225-1411 if we can be of further assistance.

Sincerely yours,

for Michael Amaral
Endangered Species Specialist
New England Field Office

APPENDIX E

CORRESPONDENCE WITH MASSACHUSETTS HISTORICAL COMMISSION

TRC

Customer-Focused Solutions

July 11, 2003

Mr. Edward Bell
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, Massachusetts 02125

Re: USGen NE Salem Harbor Generating Station
Salem Harbor Station 310 CMR 7.29 Emission Control Project
Salem, Massachusetts
MHC# 13738

Dear Mr. Bell:

Per your request, enclosed please find 3 conceptual drawings of the USGen NE Salem Harbor Generating Station Emission Control Project. The enclosed drawings show the pre-development site arrangement, the general arrangement for the emission control project and the general arrangement of the site after the implementation of the emission control project. Please note, the enclosed drawings are preliminary/conceptual, as a contractor has not yet been selected.

Should you require any additional information or have any questions regarding the proposed Salem Harbor Station 310 CMR 7.29 Emission Control Project please contact me at 978-656-3567. Thank you for your review of this project.

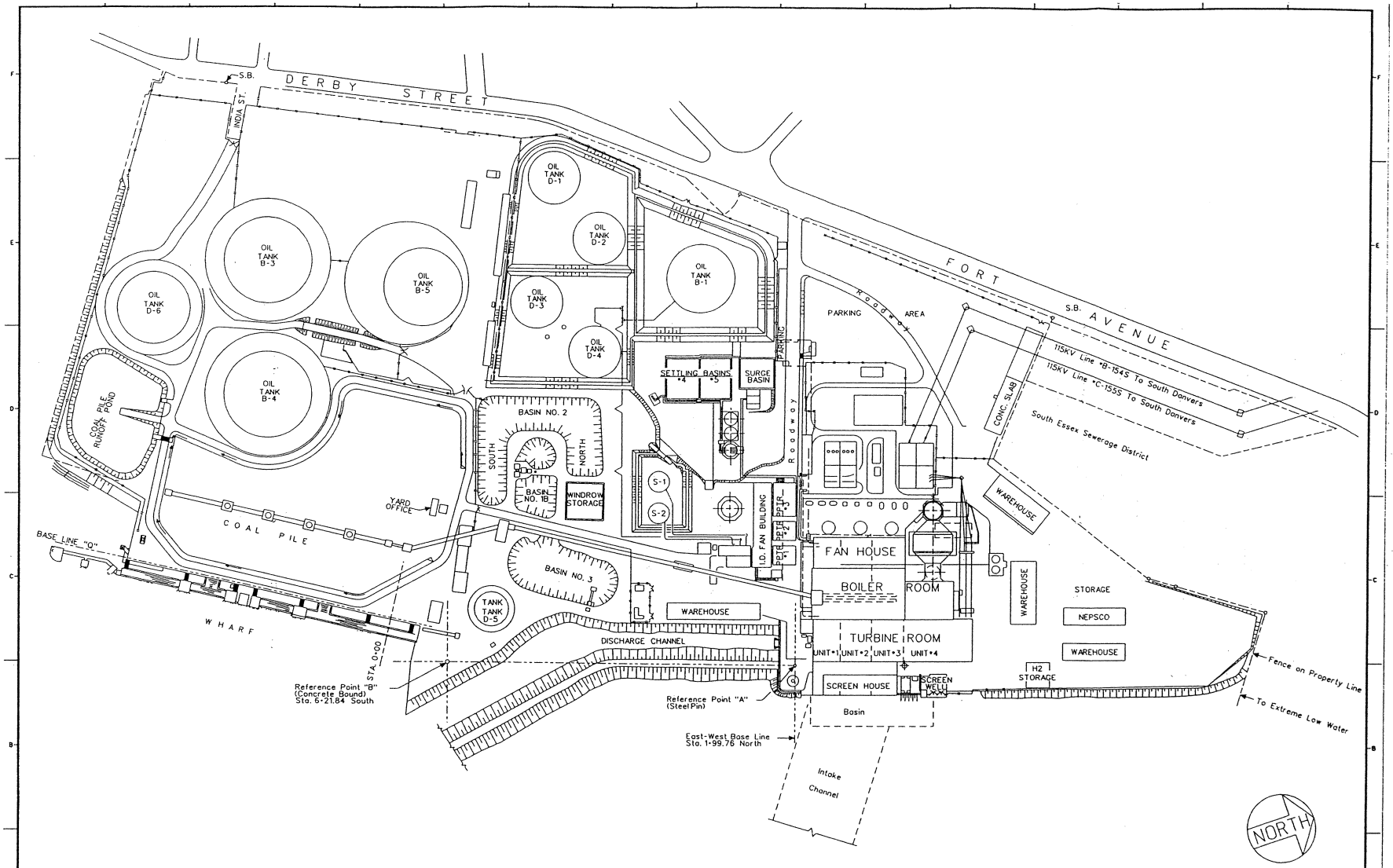
Sincerely,

Charles Cooper
Director, Environmental Permitting and Planning

cc: Louis Arak, USGen NE Salem Harbor
Mary Beth Gentleman, Foley Hoag

Enclosure

Boott Mills South, Foot of John Street • Lowell, Massachusetts 01852
Telephone 978-970-5600 • Fax 978-453-1995



DRAWING RELEASE RECORD

REV.	DATE REL'D	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD

REV.	DATE REL'D	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
0	12-06-02			---		

SCALE: AS NOTE

PROJECT NUMBER

PRE-DEVELOPMENT SITE ARRANGEMENT EMISSION CONTROL PROJECT UNITS 1, 2 & 3 USGEN SALEM HARBOR STATION

Sargent & Lundy

DRAWING NO. GA-3F REV. 0

SHEET OF

salmga3f.dgn

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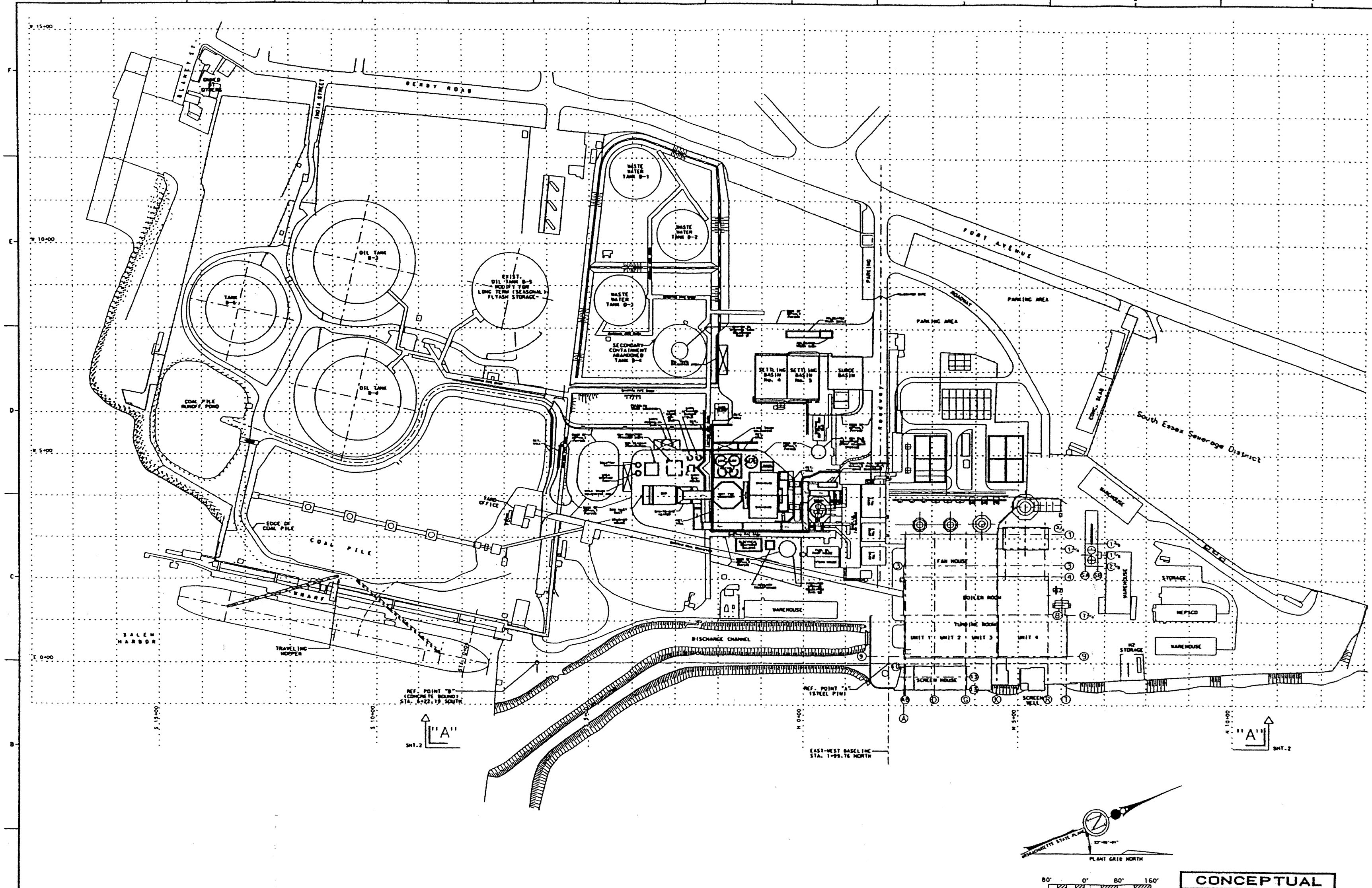

CONCEPTUAL

REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD

REV.	DATE REL'D	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
1	03/15/02	KERKESLAGER	KWIECIAK	----	ISSUED FOR COMMENT.	
2	03/20/02	KERKESLAGER	KWIECIAK	----	ISSUED FOR COMMENT.	
3	04/01/02	KERKESLAGER	KWIECIAK	----	CORRECTED BACKGROUND FOR RECORD.	
4	05/14/02	KERKESLAGER	KWIECIAK	----	REVISED NEW EQUIPMENT ARRANGEMENT.	
5	08/14/02	KERKESLAGER	KWIECIAK	----	ISSUED FOR REFERENCE.	
6	08/23/02	KERKESLAGER	KWIECIAK	----	ISSUED FOR REFERENCE.	

SCALE: AS NOTED

PROJECT NUMBER

GENERAL ARRANGEMENT
EMISSION CONTROL PROJECT
UNITS 1, 2, & 3
USGEN
SALEM HARBOR STATION

Sargent & Lundy

DRAWING NO. GA-3 | REV. 6

SHEET 1 OF 2

FILE: salmga3-1.dgn

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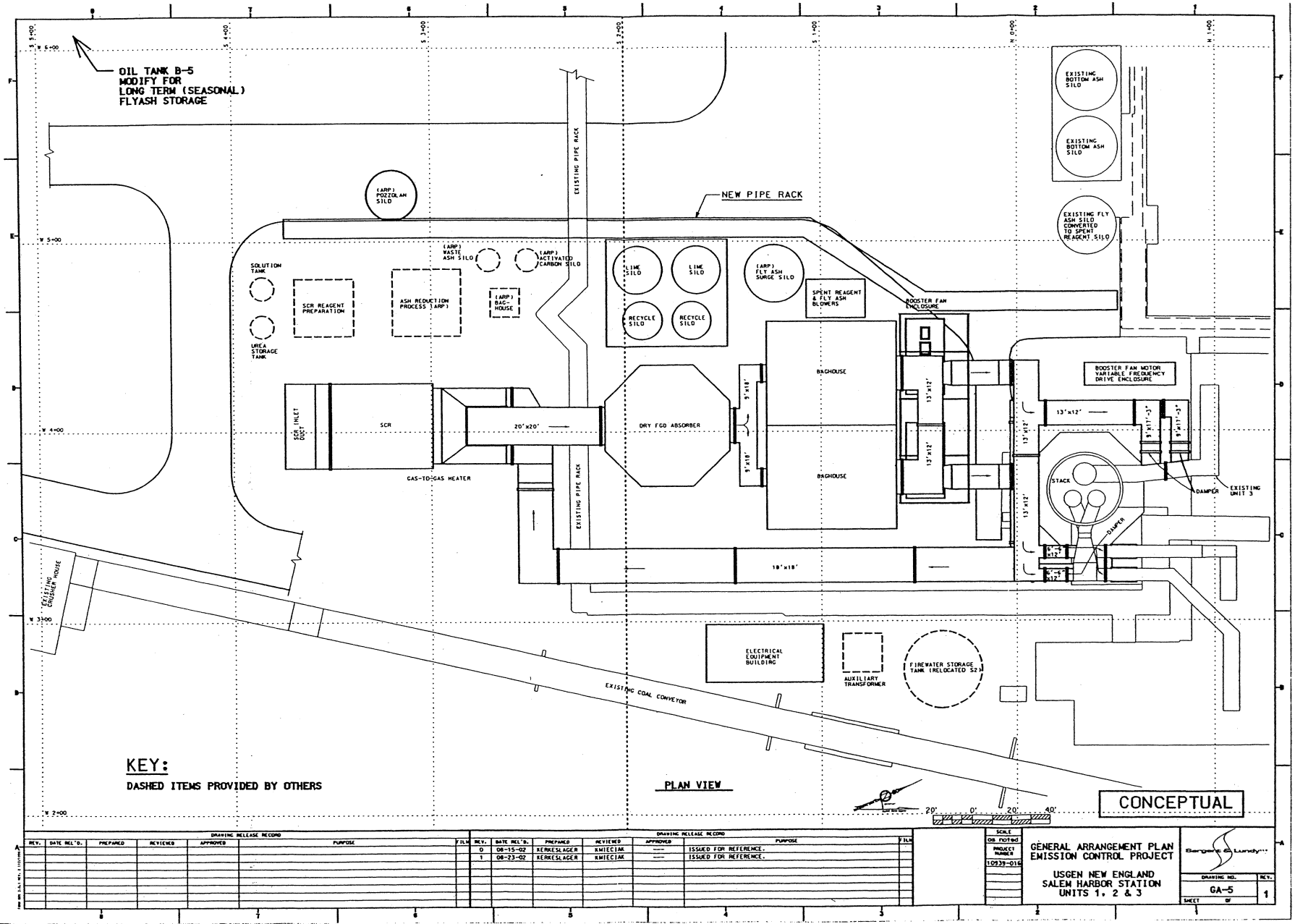

DRAWING RELEASE RECORD						
REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM

DRAWING RELEASE RECORD						
REV.	DATE REL'D.	PREPARED	REVIEWED	APPROVED	PURPOSE	FILM
0	08-15-02	KERKESLAGER	KWIECIAK	---	ISSUED FOR REFERENCE.	
1	08-23-02	KERKESLAGER	KWIECIAK	---	ISSUED FOR REFERENCE.	

SCALE: as noted
PROJECT NUMBER: 10939-016

GENERAL ARRANGEMENT PLAN
EMISSION CONTROL PROJECT

USGEN NEW ENGLAND
SALEM HARBOR STATION
UNITS 1, 2 & 3

Bergen & Lundy

DRAWING NO. GA-5
REV. 1
SHEET OF

e:\salem_harbor\salmga5.dgn Aug. 23, 2002 07:26:17

cc. [illegible]
MB Gentleman
T. Claussen
J. Brandt
Salem File
CBC

The Commonwealth of Massachusetts

William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

July 10, 2003

Charles Cooper
Director
Environmental Permitting & Planning
TRC
Boott Mills/Foot of John Street
Lowell, MA 01852

RE: USGen Salem Harbor Generating Station, Salem Harbor Station Emission Control Project, Salem, MA. RC.13738.

Dear Mr. Cooper:

Thank you for providing preliminary information to the Massachusetts Historical Commission concerning the addition of equipment at the project area referenced above, received by the MHC on July 1, 2003. The goal of the project is to reduce emissions and improve air quality to comply with 310 CMR 7.29 and an Administrative Consent Order dated June 19, 2003.

The project area is in proximity of numerous historic properties included in the Inventory of Historic Assets of the Commonwealth, and historic and archaeological districts listed in the State and National Register of Historic Places (e.g., the Salem Maritime National Historic Site, the Salem Multiple Resource Area, the Winter Island Historic and Archaeological District, etc.). The Salem Harbor Generation Station property has been previously and substantially impacted.

Additional information is required by the MHC to determine what effect, if any, the project may have on significant historic properties. Please submit scaled project plans and elevation drawings showing proposed and existing conditions. If the proposed equipment will be visible beyond the Salem Harbor Generation Station property, please also submit a photographic simulation showing existing and proposed visual appearances of the equipment taken from several vantage points within the surrounding historic and archaeological districts and properties, keyed to a map. Please submit a copy of the additional information also to the Salem Historical Commission.

These comments are offered to assist in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800) and M.G.L. Chapter 9, Section 26-27C (950 CMR 71). Please contact me if you have any questions.

Sincerely,

Edward L. Bell
Senior Archaeologist
Massachusetts Historical Commission

xc:
John Felix, DEP
DEP-Division of Air Quality
Salem Historical Commission
Historic Salem Inc.
Salem Maritime National Historic Site

220 Morrissey Boulevard, Boston, Massachusetts 02125
(617) 727-8470 • Fax: (617) 727-5128
www.state.ma.us/sec/mhc

APPENDIX F

CORRESPONDENCE REGARDING MEPA REVIEW

The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
251 Causeway Street, Suite 900
Boston, MA 02114-2119

MITT ROMNEY
GOVERNOR

KERRY HEALEY
LIEUTENANT GOVERNOR

ELLEN ROY HERZFELDER
SECRETARY

Tel. (617) 626-1000
Fax (617) 626-1181
http://www.mass.gov/envir

August 8, 2003

Mr. Edward Braczyk
Department of Environmental Protection
One Winter Street
Boston MA 02108

Re: Salem Harbor Emission Control Plan, Salem MA

Dear Mr. Braczyk:

I am writing in response to your request for a determination whether an Environmental Notification Form (ENF) would be required for the above referenced project.

According to your memo of July 16, 2003, the project consists of the installation of emission control equipment at USGen New England's Salem Harbor electric generating station, in accordance with an Administrative Consent Order entered into in June of 2003. The project also will include dust control measures for the facility's coal pile, and the use of secondary effluent from the South Essex Sewage District treatment plant for use in the emission controls. All of the project will take place in already developed portions of the 66-acre active power plant site, and no significant increase in impervious area is involved.

While a new Chapter 91 license will be required, no new non-water-dependent use of tidelands would occur. The project would include a minor modification to an existing major stationary source, but there would be no "significant net" increase in actual emissions of PM10, CO, SO_2, VOC, lead or NO_x.

Based on the information that you have provided, the project does not appear to exceed MEPA review thresholds. Therefore, the filing of an ENF is not required.

Sincerely,

James W. Hunt
Assistant Secretary